

MARINE RECORD

ESTABLISHED 1878.

VOL. XXI, No. 38.

CLEVELAND--SEPTEMBER 22, 1898--CHICAGO.

\$2.00 Per Year. 5c. Single Copy

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

PRESIDENT.

JAMES S. DUNHAM, Chicago

VICE PRESIDENTS.

H. A. Hawgood, David Vance, C. W. Elphick, A. A. Parker, G. L. Douglas, G. A. Tomlinson, Chas. A. Eddy, F. J. Firth,	Cleveland Milwaukee Chicago Detroit Buffalo Duluth Bay City Philadelphia	Leander Burdick, M. J. Cummings, Alvin Neal, James McBrier, J. H. Westbrook, F. W. Gilchrist, G. E. Tener,	Toledo Oswego Port Huron Erie Ogdensburg Alpena Fairport
---	---	--	--

SECRETARY.

CHARLES H. KEEP, Buffalo

TREASURER.

GEORGE P. MCKAY, Cleveland

COUNSEL.

HARVEY D. GOULDER, Cleveland

WRITTEN ARGUMENTS IN FAVOR OF ABOLISHING CANAL TOLLS.

It is not probable that a hearing will be given to the committee of the Lake Carriers' Association on the subject of Canadian canal tolls. The so-called United States and British joint high commission for the adjustment of Canadian questions re-assembled at Quebec on the 20th inst., but the disposition among both Canadian and American members is against oral hearings. The Lake Carriers' Association would, of course, present their arguments to the American commissioners only, but it is not probable that even this opportunity will be afforded them, as a letter from Mr. Chandler P. Anderson, secretary of the American commission, says that the time of the commissioners is already fully taken up. A brief will undoubtedly be prepared from the Lake Carriers' Association, and the Chicago Board of Trade and other commercial bodies will probably take a like course.

COMPASS VARIATION.

The earth is a huge magnet, and has a south and north magnetic pole. An iron bar acquires polarity by magnetism, and when freely suspended from its center of gravity (either by a thread or being poised on a sharp point) it will arrange itself in the magnetic meridian and point to the magnetic poles of the earth. These manetic poles are respectively the points on the earth towards which the magnetic needle directs itself, or where the intensity of the magnetic force is a maximum, and above which the dipping needle (an instrument consisting of a magnetic steel bar suspended in a horizontal plane) will assume a vertical position, or, in other words, the ends will point up and down.

The north magnetic pole was discovered in 1833, and is located in 70° N. latitude, and 97° W. longitude. The south magnetic pole was discovered in 1839, and is located in 76° S. Latitude, and 168° E. longitude. Since the earth resembles an ordinary magnet it having two poles, it must also have a neutral line or magnetic equator. The magnetic equator is a sinuous curve, crossing the geographical equator at two points, in the Atlantic about 15° W. longitude, and in the Pacific 168° W. longitude. Its greatest distance from the equator is 16° S. latitude in Brazil, and 10° N. in the Indian Ocean. The magnetic poles are unlike the geographical poles in that they cover an area of several square miles (50), while we know the geographical poles are points.

The general law of magnetism is that like poles repel, and unlike poles attract. We speak of the north pole of the needle, and the north magnetic pole; hence, for convenience, the polarity is distinguished by colors, the north end of the needle being called red polarity, the north magnetic pole blue polarity, while the south end of the needle is blue polarity and the south magnetic pole red polarity. This

phaseology is admitted as astronomers speak of the sun rising and setting. There is actually no red or blue any more than the sun rises or sets.

TO STAMP SHIPS' MANIFESTS.

Assistant Secretary Spaulding, of the Treasury Department, has rendered his decision that an internal revenue war stamp of \$5 need not be affixed to manifests of foreign vessels covering cargoes to be conveyed in the ships from one port to another in the United States for transportation to a foreign country, but that such a stamp must be placed on the manifests of the cargo at the port of export from this country. He calls the attention of collectors to the requirements of the war revenue act relating to stamps on shippers' manifests, they being of a different character from the master's.

REGULATIONS AND INSTRUCTIONS RELATING TO THE SAVING OF LIFE.

The following signals recommended by the late International Marine Conference for adoption by all institutions for saving life from wrecked vessels, have been adopted by the Life-Saving Service of the United States:

1. Upon the discovery of a wreck by night, the life-saving force will burn a red pyrotechnic light or a red rocket to signify "you are seen; assistance will be given as soon as possible."

2. A red flag waved on shore by day, or a red light, red rocket or red Roman candle displayed by night, will signify, "haul away."

3. A white flag waved on shore by day, or a white light slowly swung back and forth, or a white rocket or white Roman candle fired by night, will signify, "slack away."

4. Two flags, a white and a red, waved at the same time on shore by day, or two lights, a white and a red, slowly swung at the same time by night, or a blue pyrotechnic light burned by night, will signify, "do not attempt to land in your own boats; it is impossible."

5. A man on shore beckoning by day, or two torches burning near together by night, will signify, "this is the best place to land."

THE VOYAGE OF THE DIRIGO.

A year ago last June the American steel ship Dirigo, Capt. Goodwin, sailed out of the Golden Gate bound for Liverpool, which port she made, 108 days from San Francisco. She crossed to New York, and loaded there for Shanghai, reaching destination in a voyage of 132 days; from there to Port Angeles she was 31 days, and from Seattle here 8 days, a very creditable record, so says the San Francisco Weekly Commercial News. On the voyage to Shanghai, Capt. Goodwin was spoken by an English steamer, and was told of the war between Spain and America, and, after receiving the news, he looked upon every vessel that hove in sight as a possible enemy. He was only 250 miles off Manila, May 1, when Dewey destroyed the Spanish fleet in that harbor. At Shanghai it was difficult to secure a cargo for the Dirigo, as the flag was that of a beligerent, but the captain stated he preferred to have the bottom drop out of the vessel to changing her flag, and neither happened. She made as high as 250 knots a day for over a fortnight when coming to this coast—a most remarkable record. Everyone here knows the Dirigo, and, therefore, will be interested to learn that she is a Scotch built vessel, by an English paper, because her plates were rolled there. Now the United States is supplying the Scotch and Irish shipyards with steel plates; and therefore, on the same ground, all vessels launched over there should be claimed as American built. Evidently the Commercial News is not willing that we should lose one jot or title of our shipbuilding credit at this time. The day is fast approaching, however, when our steel built vessels will be in the majority of the world's carrying trade, even as our wooden clipper built ships held the sway in former days.

LEGALITY OF MARRIAGES ON SHIPBOARD.

The Supreme Court of California in affirming the judgment of the lower court regarding the legality of a marriage which took place on a tug boat at a distance of nine miles from the land, says: It is admitted by the parties to the suit that they had gone without the jurisdiction and the laws of California in order that they could be married, and with the intention of returning immediately and assuming the marriage relation. This of itself, says the court, would not have invalidated the marriage had there been a law governing that particular form of ceremony. It continues:

"The law of the sea, as it may relate to the marriage of citizens of the United States, can not be referred to as the common law of England any more than it can be to the law of France or Spain or any other foreign country. We can find no law of Congress, and none has been pointed out by the appellant, in which the general government has undertaken or assumed to legislate generally upon the subject of marriage on the sea. Nor, indeed can we find in the grant of powers to the general government to the several states, as expressed in the National Constitution, any provision by which Congress is empowered to declare what shall constitute a valid marriage between citizens of the several states upon the sea, either within or without the conventional three-mile limit of any shore of any state; and clearly does no such power rest in Congress to regulate marriages on land except in the District of Columbia and the territories of the United States, or where it possesses the power of exclusive jurisdiction.

"The parties did not go to any other state or country to be married. They went upon the high seas, where no written law of which we have any knowledge existed by which marriage could be solemnized. The rule, therefore, that the law of the place must govern, does not operate, because there was no law of the place, unless we may hold that the law of domicile applies.

"We find no case holding that parties domiciled in a state may, for the avowed purpose of evading its laws, go where no law exists and consummate marriage in violation of the laws of their domicile and immediately return and claim a valid marriage. In all cases where the statutes have been thus circumvented it was accomplished by a marriage valid in the place where celebrated. ***

"In the case before us the parties not only went where there was no law authorizing the marriage, but they went with the intention of immediately returning to their domicile, where they supposed the law would not admit of their marriage to enjoy the fruits of their contract. *** There is, we conceive, no ground of expediency, sound policy or good morals upon which the transaction can be given legal sanction. *** Unless it appears that this marriage was consummated under some recognized law the courts of California should not declare it valid."

CUYAHOGA DISTRICT.

RECEIPTS AND SHIPMENTS.

Receipts of iron ore and shipments of coal, District of Cuyahoga, August, 1898, have been issued from the customs house at Cleveland. They are as follows:

Ore receipts—Cleveland, 438,108 gross tons; Ashtabula, 533,463; Conneaut, 254,224; Fairport, 178,435; Lorain, 80,375. Total, 1,484,605.

Coal shipments—Cleveland, 150,489 gross tons; Ashtabula, 136,340; Conneaut, 11,468; Fairport, 18,575; Lorain, 14,068. Total, 330,940.

From the foregoing it will be seen that the port of Ashtabula leads in the receipts of iron ore, and Cleveland in the coal shipments.

The work of driving piles and constructing revetment at the Sturgeon Bay canal has been resumed. A total of 1,200 feet is to be completed before the season closes.

NEWS AROUND THE LAKES.

CLEVELAND.

Special Correspondence to The Marine Record.

Capt. F. D. Herriman, of Chicago, visited Cleveland on Wednesday and met a number of vessel men who were pleased to see him looking so well and hearty.

Z. H. Kneal, engineer of the Alpena owned steamer Norseman, is still sticking to his post in the lumber trade. Evidently Mr. Kneal knows when he is in a good employ, and his owner Mr. Gilchrist no doubt fully appreciates the services of a careful and attentive engineer.

The old canal schooner South-West, 279 net tons, built at Ogdensburg in 1866, has piled herself up on Huron Island, Lake Superior, and will probably leave her bones there. She has been owned for several years by Mr. Bradley, and was uninsured, so dwindles away the old time Bradley fleet.

The side-wheel steamer City of Erie, of the Cleveland & Buffalo line, Capt. John Edwards, rescued the crew of the schooner Keepsake which foundered on Lake Erie Sunday morning. The crew abandoned the schooner after she had been dismasted, and were picked up by the passenger steamer.

The wooden steamer Oscar T. Flint was badly damaged by fire while lying at the Cleveland & Pittsburgh ore dock, on Friday morning. Several of the crew who were sleeping on board, were aroused by the heat and driven ashore. The Flint is owned in Detroit. The damage is estimated at from \$2,000 to \$3,000.

The Cleveland Ship Building Co., have now under construction a large steel steamer for Detroit owners, Mr. Chas. Calder, superintendent of the Detroit Dry Dock Engine Works will see the Howden hot draft system fitted in the new craft and she is to be of the latest and best type afloat on fresh water.

The brief of the Lake Carriers' Association favoring the abolition of Welland canal tolls has been forwarded to the representatives of the United States on the international commission which is again in session at Quebec. It is a very strong document. Vesselmen have about given up the hope of being given an oral hearing by the commission.

An inquiry came to me this week for a good preparation to keep flexible steel wire rope, used on hoisting machines, in good order. I recommended the Dixon graphite and told the superintendent to write that firm for particulars regarding its application. Was this the best advice I could have given or will the editor mention if there is anything better in the market with which he is acquainted?

Farasey & Marron, steamboat agents, wharfingers and general forwarders, River street, reported to the police Wednesday morning that 300 pounds of copper were stolen from their docks Tuesday night. The property was evidently taken away in a wagon, and was valued at \$39. The private watchman was evidently bested but the police patrol ought to have known something about the robbery.

On T. W. Bristow resigning as superintendent of construction with the Cleveland Ship Building Company, the foremen of the several departments, planned for him a surprise, and on Wednesday presented him with a handsome charm set in diamonds as a mark of esteem. Mr. Bristow was some time ago the recipient of a handsome gold watch secured after a vote was taken on the most popular man on the West Side. A large number of people regret that Mr. Bristow is no longer with the Cleveland Ship Building Co.

The Northern Transit line steamers Empire State and Badger State have made their last runs for the present season between Toledo, Cleveland, Oswego and Ogdensburg. The venture, which was to a considerable extent an experimental one, has proved so satisfactory to its projectors that two additional steamers will be purchased during the winter and the route covered semi-weekly next season. New boilers are to be placed in the Badger State and Empire State, and the capacity of their engines is also to be increased.

Col. J. W. Barlow, of New York, and Major Thomas W. Symons, of Buffalo, the two government engineers sent here by the War Department to examine the proposed plans for straightening the harbor line of the city, held a session in the library of the Chamber of Commerce this week. Col. Jared A. Smith, Mayor McKisson, Capt. Percy W. Rice, Capt. Thomas Wilson, Patrick Smith and Harvey D. Goulder, the attorney of the Lake Carriers' Association, were present, and the commission inspected the harbor after listening to the arguments advanced by those in attendance. The findings in the matter will be referred to Washington before being made public.

Mr. James Kenealy, successor to W. B. Stockman as local forecast official in charge of the local weather office, assumed charge on Tuesday. The transfer of the office occasioned considerable work for the new officer. Mr. Kenealy has served the government in the weather bureau for 22 years, and his work in the past proves him to be one of the most efficient officers in the service. In speaking of his work Mr. Kenealy says: "This is the first time I ever visited Cleveland. I think I will be able to give good service here, especially in connection with Cleveland's large shipping interests. I have had considerable experience in lake matters while at the Duluth weather bureau, where I have been for the last five years." Mr. Kenealy has filled positions in several weather bureau offices throughout the country, among which are St. Louis, Chicago, Washington, Vicksburg and Duluth.

CHICAGO.

Special Correspondence to The Marine Record.

The fin keel sloop yacht Vanenna was in the Independent Tug Line's floating dry-dock for bottom cleaning and painting.

Grain freights advanced, Monday, to 1 1/4 cents on corn to Buffalo. Confidence is expressed by vessel agents that 1 1/2 cents will soon be obtained.

Capt. Thomas Roche has sold the schooner Naiad to the Charlevoix Lumber Co., Charlevoix, Mich., consideration \$4,000. The Naiad will become consort to the company's steamer Pine Lake.

The H. W. Williams Transportation Co.'s steamer City of Kalamazoo left here Tuesday night for Milwaukee, to fill the place of the Crosby Transportation Co.'s steamer Wisconsin, whilst the latter is receiving a thorough overhauling and partial rebuild.

At the Chicago Ship Building Co.'s shipyard the steamer Escanaba was in dock for some new plank, some new deck beams and deck, a new rudder and a new wheel, and calking all over; the steamer Lewis Pahlow for some new bottom plank and calking; the barge Delta for calking all over.

The steamer Fred Mercur, when going up the south branch of the Chicago river, on Saturday, had her pilot house, Texas and upper works on the port side carried away by collision with Randolph street bridge, the bridge-tender having swung the bridge as she was about to go through the west draw.

The accident to the machinery of the steamer City of Milwaukee, coming so closely after the City of Chicago, has seriously crippled the service of the Graham & Morton line for the fruit trade. They have now only two small propellers to do the work, but will bring in another boat at the earliest moment.

The schooner J. H. Mead, Capt. O. E. Larsen, of this port, is reported ashore at Keweenaw Point, probably a total loss. The schooner Mediator, Capt. Emil Christin, of this port, is also reported ashore at Keweenaw Point, a total loss. Marine men at this port are in hopes that the above casualties are not so bad as reported.

Capt. Edward W. Davy died this week at the age of 71 years. Deceased had been a sea captain for ten years and a lake captain for twenty years. Among marine men he was well known. He was born in county Wexford, Ireland, and came to the United States in 1854. The same year he made his way to Chicago by way of New Orleans.

During Wednesday night three masked men entered the cabin of the schooner George Sturges, at Chicago, and with drawn revolvers subdued the inmates. Everything worth taking was gathered in, even to the compass of the vessel. Capt. James Godman lost two overcoats and all the wearing apparel in his stateroom. Loaded with their spoil, the pirates backed out of the cabin and got away.

It is now feared that the steamer Colorado will be a total loss. Capt. Cyrus Sinclair, representing the underwriters, left here on Monday for Houghton to reach the scene of the wreck. Tugs have been sent from Duluth to the assistance of the stranded boat. The latest report says that the steamer is hard aground with a cargo of 1,300 tons of flour. The starboard engine has moved two or three feet, and the boilers have come through the bulkhead. Heavy bottom damage is feared and an expensive job is looked for from present indications. She stranded on a reef near Eagle Harbor.

At Miller Bros.' dry docks the steamer I. Watson Stephenson is in dock for repairs to her stern and wheel, and bottom calking; the steamer City of Kalamazoo was in for overhauling and calking; the barge Iron Cliff for searching up and calking; the steamer Westover for inspection and leak stopping; the steamer City of Grand Rapids for a new wheel and some bottom calking; the schooner R. Kanters for bottom calking; the steamer Fayette for repairs to stern bearing, and some calking; the steamer Fred. Mercur is receiving a new pilot house and Texas and all new stanchions, covering board and rail, above the forecastle deck on the port side.

The report that Capt. Thomas McBride met death by drowning in the river at the foot of Franklin street last Wednesday evening seems to have resulted from mistaken identity. Capt. McBride is now master of the excursion steamer Ivanhoe. After having read the account of his supposed demise he called at the undertaking establishment, 22 Adams street, and looked at the body of the man who had met death by drowning the previous evening and been identified as McBride by Capt. Frank Dorrill, of the tug A. G. Van Schaick. "The man resembles me in appearance, but thank God, I am in very good health," said Capt. McBride. The body remains unidentified.

The stocks of grain in Chicago elevators last Saturday evening were 655,000 bushels of wheat, 7,659,000 bushels corn, 706,000 bushels of oats, 104,000 bushels of rye, and 72,000 bushels of barley. Total, 9,196,000 bushels of all kinds of grain, against 23,318,000 bushels a year ago. For the same date the Secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 10,188,000 bushels of wheat, 19,247,000 bushels of corn, 4,701,000 bushels of oats, 625,000 bushels of rye, and 660,000 bushels of barley. These figures are larger than the corresponding ones of a week ago by 1,782,000 bushels of wheat, 1,887,000 bushels of corn, 424,000 bushels of oats, 26,000 bushels of rye, and 222,000 bushels of barley. The visible supply of wheat for the corresponding week of a year ago increased 1,364,000 bushels.

BUFFALO.

Special Correspondence to The Marine Record.

Several tugs bound for Tonawanda have been under the breakwater for several days, owing to low water. Vesselmen will find it profitable not to load deeper than 13 feet 8 inches when going down Niagara river, unless there is a sudden and radical change in the depth of the water and that is not looked for just at this season of the year.

Some of the prominent business men of the Tonawandas are seriously considering the advisability of building grain elevators on the narrow strip of land between the Erie canal and the Niagara river. From time to time eastern elevator owners have been there prospecting for a suitable site. If the deal goes through a stock company is to be formed.

Mr. J. C. Gilchrist, of Cleveland, when here this week attributed the low rate on coal to Duluth to fixtures ahead, one owner or vessel manager sending forward as much as 700,000 tons on a 20 cent basis. Mr. Gilchrist does not think that any advance that may be made from this will recoup vessel owners for the low rate accepted during the season.

The new steel steamer H. S. Holden, Mitchell & Co. Cleveland, managing owners, loaded 6,800 tons of coal here on Saturday as her first cargo. She is a well finished boat and vesselmen in saying that she is the peer of anything ever built on the lakes give credit to her builders, the Globe Iron Works Co., of Cleveland. The hull shows good workmanship and all her fittings and equipments are very complete.

Word was received here on Monday, that the canal boat Brocton had gone ashore at Battery Point, the east extremity of Dunkirk harbor, Sunday morning on account of heavy weather, the steam canal boat Massasauga, with five boats in tow, anchored off Dunkirk at 3 o'clock Sunday morning. About 9 o'clock, while the Massasauga was towing some of the boats inside the breakwater, the Brocton went adrift. In going to her assistance the Massasauga went aground. Before she was hauled off the Brocton was on the rocks. The boats are owned by the Watson Paper Company, of Erie, Pa., and are loaded with bales of rags and paper stock.

Major T. W. Symons, Corps of Engineers, U. S. A., has received an order from the Secretary of War ordering that hereafter no vessel of any kind shall anchor in the entrance channel of Buffalo harbor between the north and south government piers, or be moored or lie at the south pier or at the north pier abreast of another vessel. Similar rules are required at other ports, and the district officers should police government piers, breakwaters and other Federal works, so as to preserve the property better than has ever been done in the past. The small patrol boat Calumet, built here for Chicago harbor paid for her construction and keep up in bringing about law and order on the piers and breakwaters at Chicago, besides saving those works from destruction, and, as it was a very good thing, we want more of it at all ports.

DETROIT.

Special Correspondence to The Marine Record.

The steamer D. C. Whitney went aground just below St. Clair Flats canal, on Wednesday. The wrecker Saginaw went immediately to her assistance.

The Michigan Brass & Iron Works, of this city, have been awarded the contract for \$22,000 worth of valves and hydrants for the new water works for the City of Mobile, Ala.

The Treasury Department has notified Collector Rich that there is no law authorizing the payment of any portion of a fine to an informer, where a pilot is convicted of serving on a boat without a license.

Capt. James Davidson will build a couple more large wooden boats this winter at his West Bay City yard and take all chances on them competing with the larger steel built craft. In spite of the rumor set afloat in Cleveland by interested parties, first-class wooden tonnage is the equal of anything afloat in the lake trade and Capt. Davidson has the courage of his convictions in going on building the craft that will and always have paid fair returns or dividends on the investment.

Capt. Alex. Ruelle has not been in the best of health for the past few years and he has now retired from business by disposing of the Ruelle tug line to his son. The tugs Lorraine, Miner and Ruelle are good, handy craft, and have earned Capt. Ruelle many a bright dollar as they no doubt will his son. Alex. Ruelle, Jr., has been associated in the business with his father for a number of years so that there will be really little or no change made through the transfer of the title in the line. Alex. Jr. is generally well liked and will no doubt hold the business patronage which the tugs have had for years past.

As a result of the award for the construction of several torpedo boats and destroyers to W. R. Trigg & Co., of Richmond, Va., preparations are being actively made looking to the establishment of an extensive shipyard there. The government allows Mr. Trigg three months in which to make his preparation. This, it is said, will be ample time.

CAPT. PHELPS, of the Milwaukee wrecking expedition, has spent the season tearing away the decks and uncovering cargo of the sunken steamer Pewabic. Very little of the cargo was recovered this year, and bad weather prevents further operations. The weight disconnected from the bell at the time the two men lost their lives has been recovered. Next year the remainder of the cargo and valuables will be recovered.

THE MARINE RECORD.

FLOTSAM, JETSAM AND LAGAN.

The body of Frank Prevo, who was drowned in Lake Superior three weeks ago, off the tug Bruce, has been found on the beach seven miles north of Pequaming.

The suit of Emily Slauson against the Goodrich Transportation Co., to recover for property utilized by the latter at Racine, is on trial at Kenosha, before Judge Goodland, of Appleton, Wis.

The experiment of running a steamer between Kenosha and Milwaukee in the freight and passenger service has proven unremunerative, and accordingly been abandoned, The L. M. Weston, which covered the route, is now laid up at Kenosha.

Capt. McGiffin of the Canadian steamer Chippewa will have charge of the steamer Ocean for the remainder of the season, in place of Capt. Trowell, whose leg was broken by the parting of a line.

On account of her rudder chains parting the steamer E. M. Peck grounded in the "Soo" river on Tuesday and sprung a leak, steam pumps were ordered on board and her consort which also went aground was floated off.

The inspector for the light-house district at Chicago, places a black gas buoy this week. There are various kinds, colors and qualities of illuminants but black gas takes the precedence on account we should say of its extreme rarity.

It is rumored at St. Joseph that the Graham & Morton Transportation Co. has chartered the steamer Mary H. Boyce to cover the Vandalia route between Milwaukee and St. Joseph during the approaching winter season in connection with the steamer J. C. Ford.

During the past year the shipyards of Seattle have turned out seventy-two vessels, fifty of which were steamers, twelve barges, seven schooners and three scows. Of this number fifty-seven were built for the Alaska trade. Their total tonnage, however, did not amount to over 25,000.

The returns of traffic through the Canadian Sault canal show that up to the end of August, 2,661 vessels passed through the lock this season, carrying 2,189,964 tons of freight. This is a decrease compared with the same period last year of 209 vessels and nearly a million tons of freight.

According to the Superior Leader the receipts of coal at the head of Lake Superior continues heavy and the capacity of the docks is nearly exhausted. The receipts up to the close of August were within 300,000 tons of the total deliveries last season. The figures are 1,153,964 tons, as against 1,471,195 tons in 1897.

The largest bulk oil carrier in the world, the British steamer Tuscarora, has been built at Sunderland for the Anglo-American Oil Co. She will trade from Philadelphia and New York to British ports and has a carrying capacity of over 2,000,000 gallons. She is 420 ft. 4 in. long, 53 ft 2 in. beam and 29 ft. depth of hold.

The fish tug now being built at Devney's yard, Ashtabula Harbor for Capt. Jake Pfeister and Henry Devney, will be launched in about two weeks and completed in time to enter the fall trade. She will be temporarily fitted with engine and boiler taken out of the tug Hall, and next season be probably given all new machinery, etc.

From Neafie & Levy's shipyard, Philadelphia, on Monday, there was launched a sea-going tug for Michael Moran, of New York. She is 92,10 ft. in length, 19 ft. in breadth of beam and 10.2 ft. in depth of hold. The hull and house are of steel and she will have all modern improvements and conveniences. The boat will have compound engines, and her boiler, of Scotch pattern, will be capable of resisting a steam pressure of 125 pounds of steam to a square inch.

An old cuffer under a slightly changed garb has just been related to us in the following style: A sailor went up to the font to have his baby baptized. Sailors as a class claim little stock in babies, and, naturally enough, this one presented the infant feet foremost. "The other way," said the minister, and, accordingly, Jack turned the infant upside down. "Excuse me," said the clergyman, "I mean the other way." So back came the embryo foretopman to the first position, to the discouragement of everybody. "Wind it, Jack," said the nautical assistant, and with an "Aye, aye, sir," Jack promptly turned the baby end for end, and it was duly christened head first.

The Graham & Morton Transportation Co.'s steamer City of Milwaukee, bound from St. Joseph to Chicago with about 150 passengers and 40,000 packages of fruit, became disabled by the breaking of the main crosshead in the starboard journal of her engine at 5:15 o'clock, Tuesday morning, when about six miles off Chicago. Second engineer James D. Stewart, who was on watch, immediately stopped the engine and prevented any further damage. Capt. Stewart sounded signals of distress and the Goodrich Transportation Co.'s steamer Atlanta came alongside at 5:40 a. m. and offered assistance, and then proceeded to Chicago and sent the Dunham Towing Co.'s tug J. H. Hackley to tow the Milwaukee into Chicago. The Hackley took the steamer's tow line at 6:25 a. m. and the tug Mosher took another line at 6:45 a. m. and towed the disabled steamer to Graham & Morton's dock, arriving at 8 a. m. The life-boat from the life-saving station also went out to her, but fortunately, her services were not required. The wind was blowing light from E. S. E. at the time of the accident and the steamer drifted slowly before it. There was not any consternation among the passengers, the majority of them being asleep at the time.

WRECKS AND CASUALTIES OF THE WEEK.

Owners and underwriters can mark the past week as being the most disastrous to vessel property of the season. Wrecking, salvage and towing companies as well as shipyards, dry docks, repair and equipment interests may rub their hands in glee, and so goes on the merry race for ducats.

Thick weather, accompanied with smoke from forest fires and a northwest blow on Lakes Michigan and Superior is given as the cause for most of the casualties, though the location of the forest fires have not yet been determined, while the ordinary groundings have been more frequent than usual.

The wooden steamer Colorado, Duluth to Port Huron, with a cargo of flour, stranded at Eagle river reef, Keweenaw Point, Lake Superior, and will likely prove a total loss with but small salvage on her cargo. This steamer was built in Buffalo in 1867, 1,322 net tons and was owned by J. R. Wright, of Port Huron. The steamer R. G. Stewart went ashore later on the same reef as the Colorado, but tugs released her with slight damage.

The steamer Kalkaska, with the consort Aloha in tow, reached Sault Ste. Marie on Tuesday. The Kalkaska left Duluth with the Aloha, Mead and Mediator in tow. The boats went ashore above Portage Lake canal and the Kalkaska was only able to get the Aloha afloat. Assistance was promptly sent. There will be some salvage on the lumber cargoes of the schooners Mead and Mediator, but there is small chance of saving either of the boats. The life-savers rescued the crews.

With the wind blowing a gale and a dense pall of smoke overhanging the lake, the steel steamer E. C. Pope, Duluth to Buffalo, with grain, stranded on Vermillion Point, Lake Superior, on Monday. The Pope is owned by the Eddy Transportation Co., of Bay City, is a steel steamer worth about \$200,000; her cargo \$75,000. She was released and taken in tow.

The steamer E. M. Peck grounded in the Soo River on Tuesday, on account of her rudder chains parting and she afterwards sprung a leak, requiring a steam pump to be placed on board. Her consort also went ashore.

The steamer Keystone went ashore on Big Summer Island, near Escanaba, Lake Michigan, and afterwards burned to the water's edge. There was no hull insurance on the steamer, but she was fairly well covered as to fire with Gibbs & Joys, of Milwaukee. Her insurance valuation was \$17,000. Her cargo, 1,000 tons of coal for Manitowoc, was shipped by Turney & Co., of Cleveland, and was fully insured through Smith, Davis & Co., of Buffalo.

The schooner Southwest, bound up light to load stone at Portage Lake, stranded early Monday morning on Huron Island, Lake Superior. The schooner filled and sank. Capt. James Gibson and the crew of seven men escaped in the yawl boat, landing near Skanee. Capt. Gibson says the lack of fog signals is responsible for the abandonment, as the weather was very smoky. The Southwest is owned by M. A. Bradley, of Cleveland, and was uninsured.

The steamer Queen of the Lakes, while lying at South Manitou Island for shelter, Sunday evening, caught fire and burned to the water's edge. Nothing was left but the iron hull, which is still afloat. No lives were lost, but the crew did not save their effects. The Queen of the Lakes was a small steamer of 153 gross tons. She was built at Wyandotte, Mich., in 1872, and was owned by Mr. Henry H. Noble, of Elk Rapids, Mich.

The steamer J. H. Jones, of Wiarton, Ont., collided with the steamer Pacific and sunk off Kagwong, Manitoulin Island, at midnight, on Friday. The Jones, in going to Kagwong, met the Pacific, which struck her on the port bow. She sank in eight minutes. The crew and three passengers were taken on board the Pacific. A quantity of merchandise went down with the vessel. The Jones is insured for \$7,500.

The small steamer Maud Preston, burned on Maumee Bay, five miles from Toledo, on Tuesday. The vessel was insured for \$3,000, which covers the loss.

Steamer Lewiston, Manitowoc to Buffalo, with grain, ashore near Sc. tt's Point, Lake Michigan, released herself apparently with little damage.

Schooner Senator, coal laden for Harbor Springs, ashore on Skillagalee reef, Straits of Mackinac.

The tug Salver, ashore on Skillagalee reef, while trying to release the Senator.

The steamer Spartan, went ashore in the St. Lawrence river, on the American side, opposite Iroquois. The accident was caused by the breaking of her steering gear. The swift current forced her to the point with such force that she ran out 3 feet. The Spartan is owned by the Richelieu & Ontario Navigation Co.

The Keepsake cleared from Ashtabula on Saturday with a coal cargo for Marine City, and founded in the gale which swept over the lake that night. The schooner John T. Mott, bound for Tonawanda with iron ore, sprung a leak on Lake Erie in the same gale. The Buffalo life-savers responded to signals for help, and after she was towed behind the breakwater, pumped her out. The schooner was taken to dry dock.

The steamer Charlemagne Tower, grounded on Bois Blanc Island, Detroit, during a fog Friday night. She was released at noon on Saturday.

The schooner Harold, with a cargo of lumber, reached Sault Ste. Marie on Tuesday in a waterlogged condition. Her deckload will have to be removed to enable her to be pumped out. She will then reload and proceed on her voyage.

THE body of a seaman named Martin, who was drowned from a wood scow at Port Huron recently, has been recovered.

AMERICAN IRON ABROAD.

A London journal, the Chronicle of recent date, contains an interesting interview with S. T. Wellman, of Cleveland, O., who has just returned from the Congress of the Iron and Steel Institute, held in Sweden, spent several weeks among British manufacturers. "My visit to England," he said on being interviewed, "has been for study and recreation quite as much as anything else, but I have been endeavoring to put into the hands of English steel and iron manufacturers machinery such as would enable them to produce these articles as cheap, if not cheaper, than we are doing in America. This may not seem a very patriotic thing for an American to undertake, but it is at least unselfish, is it not? It is an interesting fact that is just beginning to dawn on many Englishmen, that American steel and iron products are obtaining a startling hold as against British-made goods right here in Great Britain. I know within a very few days, for instance, of no less than 5,000 tons of American steel being sent to Harland & Wolff. Not long ago the city of Glasgow offered contracts for a large quantity of iron water pipes. The lowest three bidders were all Americans. It chanced that there was a technical flaw in the bids which gave the astonished Scots a chance to readvertise, and again the lowest bidder was an American, and though the pipes were of special lengths not often used in the States the American won the contract. I have just received from America the newly compiled figures on American steel and iron exports, and I can tell you that in spite of the war, in spite of the Dingley tariff, the American exports have reached the highest values in their history, and that prominent among them all are manufactured goods.

"I account for it largely by the fact of our improved manufacturing machinery, which machinery England is, singularly enough, deprived of by the fact that the labor unions will not permit the employer to avail himself of them. In other words, I manufacture an automatic machinery-making appliance. One American workman is able, and does operate six of these machines. The English labor union compels the manufacturer to put a man on each machine, which naturally enough shuts him off from competing with the Americans. The result you can readily appreciate when I tell you that for 10 years American exports to Europe have gradually increased, until they have wiped out the import side of the ledger and left us a handsome balance. The United States sold \$30,000,000 of iron and steel products to European consumers while in 1880 we exported only \$12,000,000 and imported over \$71,000,000. The exports of American steel rails advanced from \$2,482,208 in 1897 to \$4,613,376 for the fiscal year ending June 20, 1898. In ten years our exports of locomotives increased in value from \$500,000 to \$4,000,000 a year, and we are now sending locomotives to Egypt and Japan."

DETROIT MARINE POST OFFICE.

LETTERS REMAINING ADVERTISED IN DETROIT, MICH., POST-OFFICE SEPTEMBER 22, 1898.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Anderson D. W., Str. Italia	Gunderson Herman, Str.
Brown Capt. W., Yacht	Queen City, 2
Catherine O.	Horak Frank, Str. A. P.
Benk Alf.	Wright
Brown J. W., Str. Progress	Hein Max
Burke Maggie, Sch. R. Doud	Kinsela Arthur
Burke Geo. A.	Muir Tom
Carter Wm.	Morrisson Sara, Sch. Inter-
Cunningham H., Str. Armenia	laken
Dalb Elizabeth, Str. Waldo	McDonald Elick, Str. David-
Davis J. Wm.	son
Davis Chas. H., Str. R.	McGregor John, Sch. Ply-
Holland	mouth
Deather Gilbert, Str. Specular	Richards Alice, Capt. of
English John	Renfroe John
Freeman Harry, 2, Str.	Senior Will
Holland	Severney Mollie
Friday Herman W., Str.	Smith Geo. N., Str. Shenan-
Holland	doh
Finney Earnest, Str. Empire	Tart Eddie
City	Vearam Willie, Str. New
Gibson T. E., Str. A. P.	Orleans
Wright	Venier Clarence, Str. Desmond
Gumack Chas., Str. M. T.	Wilson Joseph
Greene	

F. P. DICKERSON, P. M.

VESSELS CLASSED.

Vessels classed or rated by the American Shipmasters' Association in the "Record of American and Foreign Shipping" this week are as follows: American tern, Humarock; American tern, Lizzie Chadwick; American tern, Woodward Abrahams; American barge, Ludwig; American barge, Regulator; American ship, S. P. Hitchcock, and American screw, Umatilla.

At a high school for girls.—Professor: "The human frame changes completely once in seven years. You, for instance, Miss Budd, who are now about seventeen, when you are twenty-four you will virtually be Miss Budd no longer." Miss Budd (blushing): "Indeed, Professor, I hope that will be so."

SUBMARINE ARMOR AND METHOD OF WORKING UNDER WATER.

(ILLUSTRATED).

Working under water, as submarine diving is always spoken of by those engaged in that pursuit, dates back to the writings of Aristotle. The fleet of Alexander the Great were harassed at the siege of Tyre by the attempts of submarine workers to sink his ships through bottom damage. Inventions and improvements on same, for working under water, were put forward in the fifteenth century, while towards the close of the sixteenth century, a treasure which had been sunk for nearly half a century, in about fifty feet of water, near the island of St. Domingo, W. I., was recovered, or rather \$1,500,000 of it, by William Phipps, of Pemaquid,



Cut No. 1.

Maine. The close of the seventeenth century saw this industry on a practical safe working basis, since which time the service has gone on improving, until at this date any ordinary man may don a diving suit and carry out instructions while working under water with ease and safety. The diver can now have his surroundings made clear by the aid of an electric light, and be in telephonic communication with those on the surface, so that the evolution from a diving bell, or various forms of such, to reliable submarine armor, donned and worn, with no more inconvenience than an ordinary combination made suit of heavy clothing, has been successfully accomplished.

The illustrations on this page show principally all that is required for a diving outfit, viz., a full diving dress, air-pump and the method employed for telephonic communication. It is not necessary in an article of this description to describe the minor fittings required, or to enter into a discussion of the various changes in manufacture produced and used in different parts of the world, only so far as to direct attention to the illustrations on this page, which represent the apparatus furnished by the Boston firm of Andrew J. Morse & Son, one of, if not the oldest* established house in the trade, and dating back to 1837.

The illustration marked Cut No. 1, shows the diver encased in Morse's improved armor, the suit consists of a helmet to protect the head; a dress of canvas and rubber, attached to the helmet; shoes with lead soles, to keep the feet down and the body upright; lead weights to sink the diver to the bottom and to prevent his rising from an over-pressure of air from the air-pump. A life or signal line is used for lowering and raising the diver, and for the transmission of signals between the diver and his attendant. The diver being dressed in his flannels, is now equipped with his

dress, the air-hose is screwed to the helmet and air-pump, the pump started and the head-piece screwed on and he is lowered to the bottom, where he can remain from one to six hours, according to the depth of water, the speed of the tide, and the character of the work.

The Cut marked No. 2 shows Morse's improved electric telephone. This apparatus meets a demand for reliable means of communication between the diver and his attendant and has been found invaluable in many instances. When in use the hand telephone is held so that the receiver comes close to the ear and the transmitter comes opposite the mouth. Speaking is carried on in a moderate tone and the submarine worker answers in the same manner.

The illustration marked Cut No. 3 shows the Morse double action air-pump for supplying two divers and is called the United States Navy pattern. The advantages pointed out for this pump over the old styles are that two divers can work at the same time and entirely independent of each other, also, by connecting the two cylinders one diver can descend into very deep water. Two men are required to work this pump while in a number of the older types four men are usually stationed at that duty.

DEPTHES AND PRESSURE.

The following table gives the pressure in lbs. on the square inch at a given depth of water, viz.:

20 feet	8½ lbs.	120 feet	52¼ lbs.
30 "	12¾ "	130 "	56½ "
40 "	17¼ "	140 "	60¾ "
50 "	21¾ "	150 "	65¼ "
60 "	26¼ "	160 "	69¾ "
70 "	30½ "	170 "	74 "
80 "	34¾ "	180 "	78 "
90 "	39 "	190 "	82¼ "
100 "	43½ "	204 "	88½ "
110 "	47¾ "	*	

*The greatest depth any diver has ever descended.

The excellence and reliability of the Morse apparatus and equipment is vouched for when it is stated that their manufacture is the standard for service in the U. S. Navy as well as the Corps of Engineers, U. S. A., and that a contract

Submarine work instead of being carried on for treasure trove, or as a means of marine offense or defense as in the earlier ages, is now a commercial necessity, nor is there a



Cut No. 2.

port in the world where some work of greater or less extent may not be carried on under water.

About a record of working under water, to the best of our knowledge 34 fathoms has been the top notch, but good work is regularly done at about 20 fathoms or 120 feet, although some excellent work has been carried on at a depth of 25 fathoms or 150 feet, but such men must be endowed with great powers of endurance, and be physically perfect in every particular.

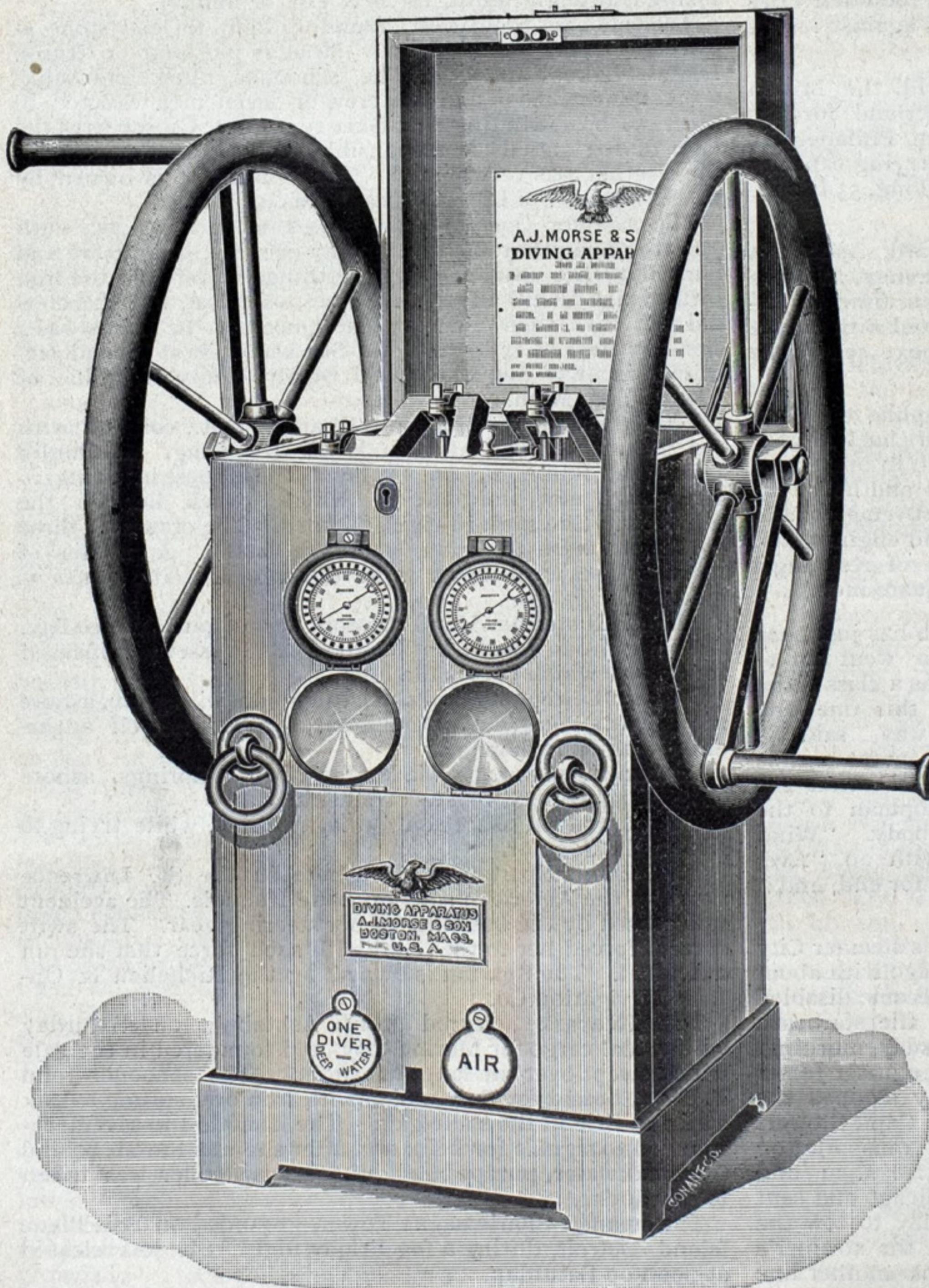
There being no reliable information upon the effect of compressed air on the lungs and other parts of the body, we can only state such results as have come to our notice.

The first time a man descends under water he is usually suffering from inherent nervousness, occasioned by the fact that he is engaged in an occupation hitherto unknown to him, consequently there is an increased pulse and peculiar gasping for breath; should these symptoms be marked it would not be advisable, while in that condition to allow the man to descend, but rather make him acquainted with the working of the apparatus, and allow him to see others descend which will gradually overcome his nervousness.

When the nervousness is overcome and the man calm, have him descend very slowly, swallowing his saliva, and not demanding too much air, resting at times to recover his equilibrium; and if the pressure should cause too much pain in the head, gently ascend a few feet, and the descent can then be continued. By proceeding slowly in making the descent a man becomes confident and will soon feel at ease in the armor.

Submarine diving is not injurious when conducted under ordinary precautions, and instances have been known where divers, who in their youth were sickly, have become strong and well.

*Since writing the above we have learned that the firm of Morse & Son is the oldest established in the United States.



Cut No. 3.

larger than has ever been given out before has just been filled by this old established firm to the order of the Navy Department. The oldest wrecking and salvage firms are also among the list of patrons eminently satisfied with this firm's production.

MARITIME LAW.

Marine insurance—Claim for constructive total loss—Vessel raised by underwriters. The Sailing Ship Blairmore Company, (limited) and others v Macredie.

(Before the Lord Chancellor, Lord Watson, Lord Herschell and Lord Shand, July 11.)

This was an appeal against two interlocutors, one pronounced by the second division of the Court of Session in Scotland on June 4, 1897, and the other by the Lord Ordinary (Lord Kyllachy) dated Feb. 18, 1897. The question was whether the liability of insurers as for a constructive total loss of the insured vessel is determined according to the state of matters as they existed when notice of abandonment was given by the insured, or at the time when the action was instituted. The appellants, who were pursuers in the action, sued the respondent as one of the underwriters of the Blairmore, for his share of the liability for the insured value of the vessel. The ship was insured for the period from April 3 to June 3, 1896, under five time-valued policies amounting in all to £15,000. Of this £100 was underwritten by the respondent, and this was a test action by the result of which the other underwriters agreed to be bound.

On April 9, 1896, the Blairmore, whilst moored in the Bay of San Francisco, was capsized and sunk by a squall. Immediately afterwards the appellants, on the instructions of the underwriters, obtained an offer to raise her for £5,760 on the condition "no cure, no pay." This offer was not accepted, and on April 15, 1896, the appellants gave to the underwriters notice of abandonment as of a constructive total loss. The underwriters declined to accept this notice, and proceeded to raise the vessel. The cost of doing so amounted to £7,600 or more, and it was calculated that when the cost of repairs was added to this sum the total outlay would be about £15,000, and the value of the vessel when repaired would be about £9,600. The appellants claimed the valued sum in the policies, but payment was refused, and on Dec. 1, 1896, the appellants raised the present action. Lord Kyllachy dismissed the action, without prejudice to the pursuers bringing another action for a partial loss. This decision was affirmed by Lords Trayner, Young and Moncreiff in the second division. It was a matter of discussion in the Courts below, whether in such a case the law of Scotland is the same as that of England.

The case was argued on Feb. 15th and 17th by Mr. Robson, Q. C., Mr. Salvesen (of the Scotch Bar), and the Hon. M. Macnaghten for the appellants; and Mr. Joseph Walton, Q. C., and Mr. Henry Aitken (of the Scotch Bar) for the respondent.

Judgment was finally delivered reversing the decision of the Court below.

The Lord Chancellor said: In "Miles v. Fletcher," Lord Mansfield said that the great object in every branch of the law, but especially in mercantile law, is certainty, and that the grounds of decision should be certainly known. In this case a controversy has been raised which I had thought had long since been laid to rest. During the existence of a time policy, a ship covered by it has been struck by a squall and sunk, and it is contended that if the underwriters can raise her up again by an expenditure of their own, and that then when she is raised she can be repaired by the expenditure of less money than her total value, when thus raised they are only to be liable as for a partial loss. It seems to me that such a proposition would unsettle the law as between insurers and insured, as it has been understood and acted upon for something like a century. I myself should say a ship was totally lost when she goes to the bottom of the sea, though modern mechanical skill may bring her up again; and I think in construing a contract now for many years a common contract, no one could doubt that that contract was intended by the parties to contemplate the loss of a ship as comprehending the case of her being sunk. It is, I think,

a total misapplication of what has been found to be a convenient test to distinguish a total from a partial loss to apply it to a case where the vessel insured has gone to the bottom. The question is, what did the contract between the parties mean? No such case has arisen before, inasmuch as, I think, so bold a contention has never been made. The cases of capture and recapture have sometimes given rise to somewhat difficult questions of fact rather than law, and I think their application to cases of loss by perils of the sea has occasionally given rise to confusion, but even in such cases it has always been held that the principle that the existence

would no longer be what would a prudent uninsured owner do, but how much would an astute underwriter expend to turn a total into a partial loss? The change of circumstances which in our jurisprudence has been held to turn a total into a partial loss has arisen, certainly originally if not altogether, in respect of insurances against capture, where, to my mind, totally different considerations arise. A vessel, by being captured, is certainly lost to its owner; but, as in one case where the question arose, a vessel may be taken and retaken before anyone knows of the loss, and as the contract of insurance is mainly a contract of indemnity, one can see how the courts would struggle against a large profit being made out of such a contract. But where the laws of other countries differ from ours in this respect I think it will be found that the difference arose from positive enactments and regulations, apparently directed to avoid the solution of difficult and complicated questions of fact. The Scotch Judges have held, apparently, that the law of Scotland is the same as the law of England, and, as in mercantile and maritime law, unlike in this respect to some other parts of Scottish jurisprudence, the sources of the laws of both England and Scotland are the same. I am glad to think, in this respect, the learned judges are right. It would be very inconvenient if, in such questions as arise in this case, the law were different. My lords, I think the

judgment should be reversed, with the usual consequences as to costs. The other learned lords concurred.

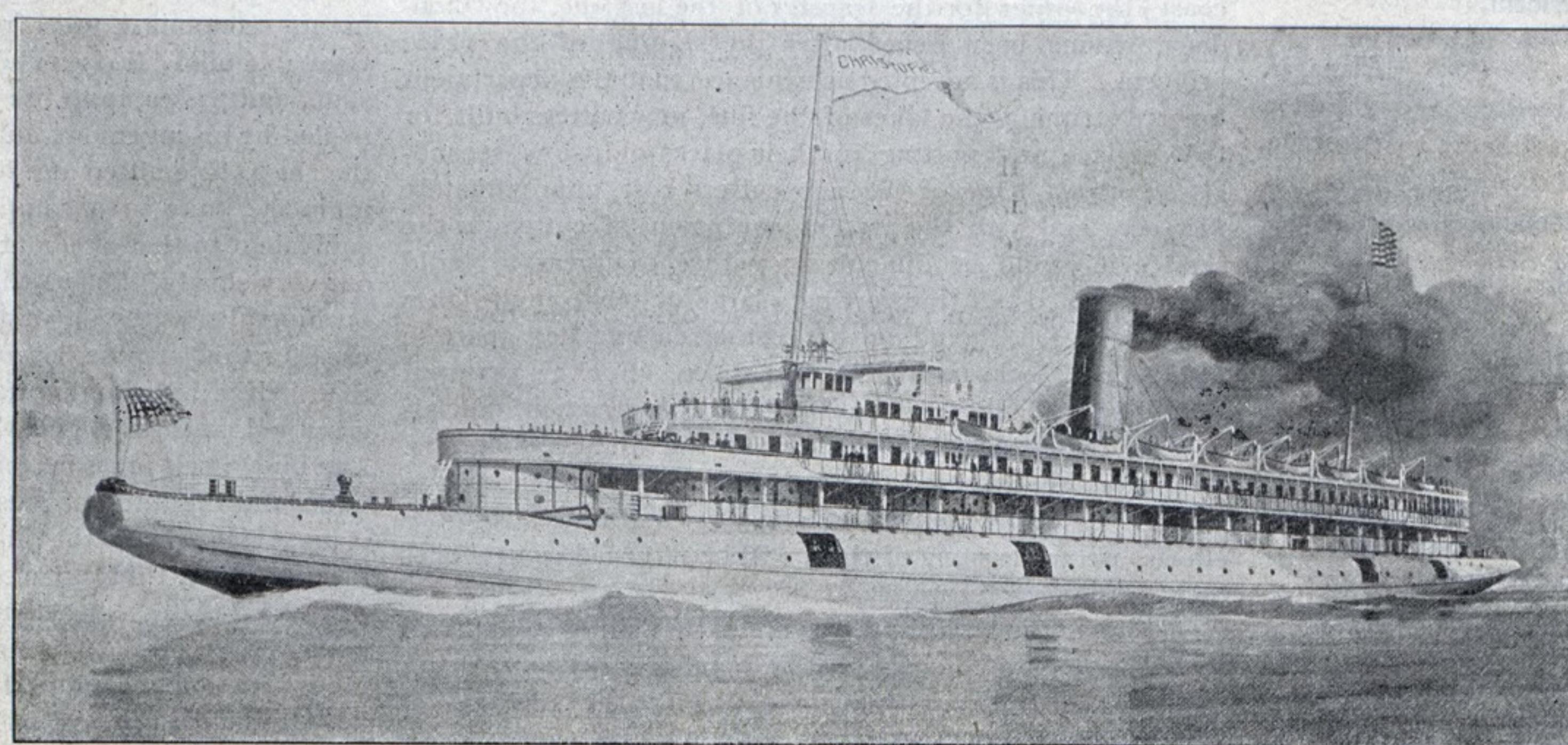
STEAMER KEYSTONE BURNED.

The steamer Keystone, which went ashore on Big Sumner Island on Monday, caught fire and burned in the afternoon. The crew managed to escape from the burning wreck, and part of the cargo may be recovered. The Keystone was loaded with 1,000 tons of coal for Manitowoc. She is owned principally by the National Bank of Commerce, of Cleveland. Captain Carlton Graves, who sailed her, also had an interest. There was no hull insurance on the steamer, but she was fairly well covered for fire risk through Gibbs & Joys, of Milwaukee. The cargo was shipped by Turney & Co., of Cleveland, and fully insured through Smith, Davis & Co., of Buffalo. The Keystone was built at Buffalo in 1866 and although she was rebuilt in 1880, she had long ago seen her best days. Her tonnage was only 654 net, and such craft can no longer make a living carrying cargoes on the lakes.

A NEW STEAMBOAT LINE.

At a meeting of officials of the Crosby Transportation Line Monday, plans were perfected for starting a new steamer line across Lake Michigan between Sheboygan and Manitowoc on the west shore of the lake and Grand Haven and Muskegon on the east side. October 1st, was the date set for opening the new line. Connections with the Grand Trunk system, the Grand Rapids & Indiana, and the Chicago and West Michigan lines will be made. The steamer Minnie M., of Mackinac, has been chartered and will be kept on the line until December, when a larger vessel will relieve her. This will give the company three steamers, the other two being the Wisconsin and Nyack, which operate between Milwaukee, Muskegon and Grand Haven at the present time.

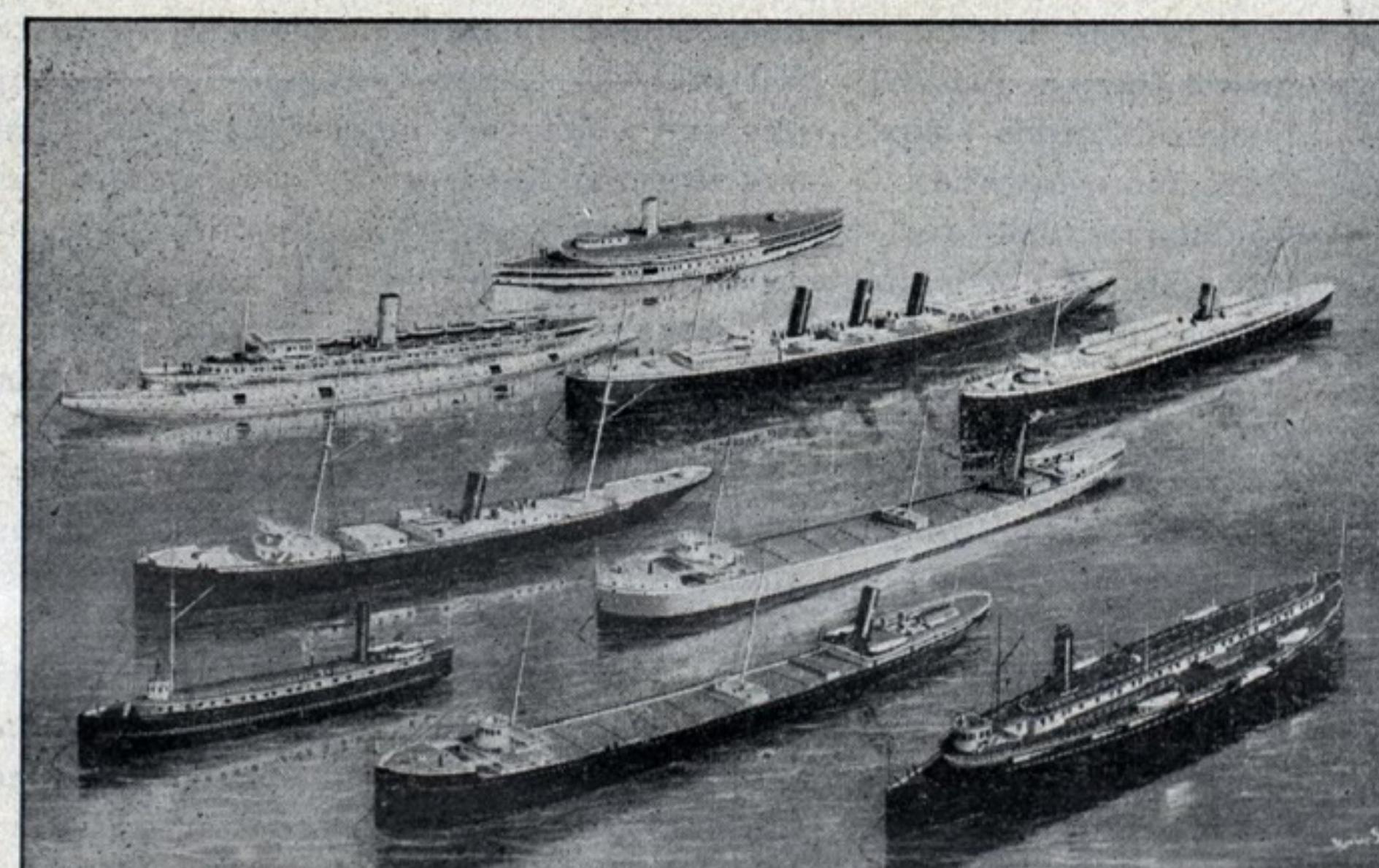
MR. HIRAM S. MAXIM, inventor of the rapid-fire guns, says the lessons of the war are that a cruiser has no chance against a battleship, that torpedoes and torpedo boats have been overrated, that fads in naval construction, like Vesuvius and Katahdin, are of little service compared with regular models, and that guns of high power with a flat trajectory are the best. "A man who can shoot straight," Mr. Maxim adds, "is worth his weight in gold." Uncle Sam's blue jackets are to be valued accordingly.



The Whaleback Passenger Steamer Christopher Columbus.

Built by the American Steel Barge Co., West Superior, Wis., and sailing on the route between Chicago and Milwaukee, before laying up for the season she is now giving general excursions from upper lake ports. Her dimensions are 362 feet in length, 42 feet beam, and 24 feet depth of hold. Engines, triple-expansion. Boilers, six of the Scotch type, and corrugated furnaces.

of the thing in esse is not conclusive against the loss being a total loss; and I think that now after all the discussion that these questions have received both insurer and insured must be taken to have understood the words "total loss" in the business sense of those words. I am disposed here to adopt the language of Chief Justice Erle, in "Adams v. Mackenzie," 13 C. B. N. S., where a ship was insured in the peculiar form of "against total loss only." The learned Judge says: "It has been urged on the part of the underwriters that they only intended to become answerable for one of two descriptions of total loss, namely, the actual total destruction of the subject matter of insurance, and not for that which all persons conversant with insurance business understand as being a total loss. All I can say is, if they so intended they have failed to



General Type of Lake Steamers.

express their intention." And Williams, J., with whom Wiles, J., concurred, says: "If the parties intended only to insure against the total and absolute physical destruction of the ship, they should have expressed themselves in different language." My view is that in the contemplation of both parties to this contract a total loss is incurred when the ship goes to the bottom. In this particular case, for the reasons I have given, the familiar test which brings a constructive total loss into a partial loss I think is not applicable at all, but if it were the formula would have to be altered. It



ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

GEO. L. SMITH, President.

C. E. RUSKIN,
CAPT. JOHN SWAINSON,
THOS. WILLIAMS, Chicago,

CLEVELAND,
Western Reserve Building.

Manager.
Editor.
Associate.

CHICAGO.
Royal Insurance Building.

SUBSCRIPTION.

One Copy, one year, postage paid,	\$2.00
One Copy, one year, to foreign countries, Invariably in advance.	\$3.00

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.
THE MARINE RECORD PUBLISHING CO.,
Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., SEPTEMBER 22, 1898.

THREE men, or rather something in the form of men, went on board of a schooner lying in the river at Chicago, last week, and after terrorizing the crew walked off with everything available. Any three ruffians could do the same thing in Chicago creek every night during the season of navigation, nor would it be a difficult job to accomplish at any other lake port, as the docks are ill lighted, deserted, and there is seldom more than a man or two on board of a schooner at night-time, anyway. Schooner sailors should take immediate warning and get the drop on any stranger coming on board after dark.

It is reported that C. Oliver Iselin, the world renowned and successful American yachtsman, is not to be a member of the syndicate which is to build a Herreshoff sloop to compete with the Shamrock, but that he will put the Defender in commission with the hope that she will beat the new yacht and capture the honor of defending the America cup. From the other side it is reported that Valkyrie III. may be fitted out to race with the Shamrock for the purpose of ascertaining the real character of the new Fife yacht. If the Defender and the Valkyrie are thus raced on both sides of the Atlantic, yachtsmen will be able to "get a line on them" in the matter of speed. But there must only be one result. The America's cup can not be allowed to reach the other side of the pond. Of a verity, if it ever gets over there it will prove awful hard sledding to bring it to the westward again.

RECENT events have aroused the old maritime spirit that for a period of years has been dormant in the United States. The shipping interests of the country have slipped from its grasp, and not until a crisis time in our history has forced the issue of naval combat with another nation, and our surplus products, raw or manufactured, are demanding a merchant marine for over-sea-freightage, has the nation been spurred with a proper nautical ambition. There are various reasons for this decline in sea power. It is not true that it has been wrenched from our grasp by designing or unfriendly aliens. This is simply a piece of political falsity. We relinquished our grip on the world's carrying trade rather than had it stolen from us, but we are fast coming into our own again and the day is near at hand when the stars and stripes with the house-flag of our merchants and shipowners will be seen at every port in this little world. Internal development and easy flowing dollar grabbing investments lured us away for a few decades from over-sea carrying commerce, especially when we could pay other nations to do this work cheaper than we could do it ourselves, considering the numberless avenues for investment held out to our people. The country, however, has been undergoing a change, and shipbuilding is about being taken a hold of, nor will the grip relax until we have secured an adequate mercantile marine. This feature may be hastened in its accomplishment, however, by well considered legislative measures.

LAKE REVENUE CUTTERS.

Those who are looking out for the interests of the Great Lakes are somewhat dissatisfied with the proposed transfer of the cutter Morrill from the Atlantic to Lake Michigan, with a station at Milwaukee. It is generally believed that this means the transfer of other second-class cutters to the lakes. This would defeat efforts that would undoubtedly be made by Senators and Representatives from the lake region to have one or two new cutters, like the Gresham, built for lake service. Considerable criticism is offered for the action of the department in sending all the new cutters to the sea coast, the order for the transfer of the last one, the Onondaga, having been issued after the signing of the peace protocol. This is accepted as evidence that the department favored stripping the lakes of the fine, new cutters built for that service and putting in their places old, slow, second-class cutters. One of the new cutters cost, approximately \$200,000, and with the present equipment of cutters in the service it would be difficult to induce Congress to build more. The cost of transferring a large cutter from the lakes to the seaboard, including the cost of cutting her apart to fit the small locks, is more than \$20,000. For this reason it would be difficult to prevail upon the government officials to incur the expense to return one of the first-class cutters. It appears that the war was utilized as a convenient excuse for getting all the cutters off the lakes and unless vigorous efforts are made none of them will be returned or new ones built in the near future.

Of course, the lake shipyards are quite willing to build all the departmental tonnage that is required, and considering that they are debarred from competing for the construction of all types of naval vessels, it would only be a modicum of justice if the building of such vessels on the lakes was made compulsory. The only possible avenue for discontent to creep in lies in the fact that through the unwearied efforts of lake interests Congress was induced to appropriate large sums for the construction of a fleet of modern revenue cutters for lake service, yet, no sooner was this fleet ready for service than it was taken to the coast, and as pointed out in the foregoing, the last one, after the peace protocol had been signed.

There has not been a decent craft in the revenue cutter service on the lakes for many years, and just as the service had been put on respectable lines, it has again been demoralized, made a burlesque of, and discriminated against in favor of the coast. The logic of the situation simply resolves itself into the fact that any future orders for the construction of revenue cutters or tonnage for the use of the Light-House Department ought to be placed at lake shipyards so as to in a measure make amends for the loss to the lakes of the former Congressional appropriations granted solely for the lakes, as in contradistinction to the coast districts.

ILLUMINATED BUOYS.

It is well known to those whose business or pleasure makes them acquainted with the waters that innumerable buoys of various shapes, sizes and colors are moored here, there and everywhere to mark the channels, turning points, sandbanks, rocks and shoals. The necessity for these guiding marks is much greater where navigation has to be conducted among ever-changing banks of sand, shingle or mud, or around submerged rocky ledges or reefs. Buoys, accurately placed, each with its own individuality as regards shape and color, afford incalculable assistance to the mariner, and enable him to thread tortuous passages in safety, and to avoid the lurking, invisible dangers scattered about the navigable channels. It is obvious, however, that such warning or guiding marks can be of little service in the darkness of night, or even with the preternatural power of vision which many sailors possess, it is seldom possible then to see a dark object, such as a buoy, on the sea's surface at any servicable distance. At night time, therefore, the seaman voyaging near land has had to depend mainly on such information as may be afforded by neighboring light-houses or light-ships, and by the use of the "log, lead and lookout." Time was when it was the general practice to drop anchor as night approached, and wait till morning light before attempting to thread the intricate waterways leading to some of our ports. But nowadays the heartless spirit of competition, the life and death struggle for commercial existence, the unceasing and increasing pressure of the demands of humanity, render it impossible for navigation to be conducted in the old, slow, cautious style, and through the darkness of night as much as in the brightness of day, swift steamers, carrying passengers and merchandise, rush to their destinations. Therefore, whatever tends to facilitate night

voyaging near our shores is of value to us all as lessening the risk to human life and adding to the security of our maritime commerce. Some few years ago there appeared in these columns an account of a new departure in regard to buoy marking, whereby certain buoys were made to show a light with the object of making them serviceable at night. The idea was that the body of the buoy should be a gas-holder, and that the gas should be allowed to pass up to a burner in a small lantern fitted at the top of the buoy. The successful working out of the idea was achieved by Mr. Julius Pintsch, of Germany, who may be regarded as the pioneer of this system of buoy-lighting. This gas employed is made in an economical way from various kinds of mineral or vegetable oils. It is put into the buoy in a compressed state, and passes up to the burner through a small pipe controlled by an ingenious automatic regulator, which causes the gas to be emitted at a low and uniform pressure. Stored up in the buoy in a compressed state—the pressure being equivalent to that of about five atmospheres—and passing out very slowly, the gas will last some two or three months, burning always, by day and by night. Coal gas cannot be used for this purpose because compression robs it of more than half of its illuminating power, while in the case of oil gas, the loss is so slight that it is practically immaterial. The buoy itself must be very strongly made to enable it to withstand the internal pressure of the compressed gas; and it must also possess the quality of being gas tight, by no means an easy thing to accomplish when the buoy is made of riveted plates, but when the buoys are welded this difficulty is overcome. The light itself is surrounded by a small lenticular arrangement intended to enhance the illuminating power, enclosed in a glass lantern fixed about eight or ten feet above the sea level, and in clear weather is visible five miles. At first it was found desirable to use only a fixed light, but more recent experience has shown that it is possible by suitable mechanism to show a quick flashing light and an occulting light, these variations being extended by the use of colored glass. A necessity of the system is that an oil-gas manufactory must be somewhere near by. When the pressure of gas in a buoy is exhausted the light will go out, and therefore it is necessary to recharge the buoy before such a condition occurs. The gas is taken out to the buoy in large iron receivers, into which gas has been forced to a pressure of ten atmospheres, or 150 lbs. to the square inch. On arriving at the buoy a connection is made with the receiver by means of a stout flexible pipe, and on the tap being turned on, the high-pressure gas rushes into the buoy until equilibrium is established between the two—that is to say, the gas transferred to the buoy and that remaining in the receiver are both under pressure to the extent of five atmospheres. Made in small quantities and only occasionally, the cost of the oil gas is considerably higher than that of coal gas, but large quantities could be made much more cheaply. The plant for making the gas is not very costly, and can be set up in a small space. Recognizing the great value to navigation of lighted buoys which could be depended upon, there are close upon 100 gas-lighted buoys in position in the United Kingdom. In the Suez canal, in Canadian and Australian waters, these buoys are in use. In the United States a considerable number are also employed; but the United States Light-House Board has also some electrically lighted buoys in Gedney's channel approach to New York. These buoys are connected to each other and with the shore by submarine cables, through which the electricity, generated on shore, is transmitted to the buoys. As now worked this is a very expensive method of lighting buoys, and it is liable to frequent interruptions of current. It is also limited in respect of distinctive varieties of light; but doubtless the system will in time be simplified, improved and rendered less costly. In France the lighting of buoys by means of gas has been largely adopted of late years, the light-house authorities of that country having taken up the matter with their usual vigor and placed such buoys in many ports of their coasts. In Germany, Denmark, Russia, Holland and Italy numerous gas-lighted buoys have replaced unlighted ones, and, in fact, the system is coming into use in all parts of the world. The advantage is obvious—buoys are rendered visible at night, and, therefore, of real service to mariners and pilots entering narrow waters. A gas-lighted buoy can be moored where it would be too expensive to place and maintain a light-house or light-ship, even if it were possible to do so. It is almost impossible to convey to the minds of landsmen the sense of relief experienced by an anxious mariner approaching narrow waters at night when he sights one of these gas-lighted buoys, giving him explicit information as to his position, and it may truly be said that the develop-

ment of this system is the most important improvement in our coast marking arrangements that has taken place in the last twenty years. It may be that in time the majority of the buoys will be gas-lit, and if it should come to pass it will be of immense benefit to general maritime traffic.

THOSE who follow lake sailing for a living are being loaded down to the scuppers lately with all sorts of pointers, that is, if they take it all aboard, as of course they should do if desirous of being thoroughly posted in their business. Owners give out voluminous letters of instructions showing what masters, pilots and engineers must and must not do. Underwriters' agents threaten, sooner or later, to bring the derelicts up with a round turn if, and when, they, the derelicts from duty, don't just act according to printed instructions, etc. Picture papers illustrate "what fools we mortals be," and of course the moral of the picture presumes to show it all. The Board of United States Supervising Inspectors of Steamboats perpetrate illustrations that are in conflict with and mutely contradict the exact terms of the sailing and steering rules adopted for lake use in Canadian waters, but without the sanction of that government. There are captains' guides, engineers' manuals, butchers' and bakers' directories, and scores of printed things which vessel owners are expected to, if not actually destined to pay for. The majority of these issues all eventually blackmail owners, and history is repeating itself in making the vessel a fair mark for all sorts and conditions of piracy, chicanery, fraud and dollar grabbing. Perhaps there has been, and is, a trifle too much of this "tickling" in vogue. A ship ought to be given exactly what she pays for, and when this is done a fifty dollar gratuity, in the form, say, of a useless advertisement, is simply as we have termed it, "blackmail," and jockeying owners; also a means of prompting other innocents to go and do likewise. A pint of oil or milk, when paid for at market rates, is not worth a half box of cigars in compliment of the purchase.

ACCORDING to dispatches from Washington it is more than likely that the officers of the ordnance bureau will recommend the use of the recently invented Krupp armor in the construction of the battleships for which contracts have just been awarded. It is claimed that experiments have shown that six inches of the new armor is equal to eight inches of the Harveyized nickel steel. If this be true the determination of the board is the only one which could be justified by common sense. Experience has shown that the United States Navy is at present up-to-date on both offensive and defensive lines. The Brooklyn proved that comparatively thin Harveyized armor can stand a good deal of pounding even at close quarters. With the increased percentage of resistance claimed for the new plate it would be possible to build battleships of a faster and lighter class without weakening them at all at any essential point. Inasmuch as these are the main considerations in building ships now, it is to be hoped that a fair and exhaustive test of the new armor will be made. Then if the claims of the Krupp people are found to be correct the battleships and cruisers that are to be added to Uncle Sam's navy should be coated with this splendid armor. No captious or mistaken idea of economy should deter the government from putting the very best material that can be had into the floating defenders of the national honor and American ingenuity,—sinew and pluck will do the rest.

By arrangement with the bidders for the construction of the new battleships, the government has provided for faster craft than was formerly designed, also with a waterline length eighteen feet in excess of that of the latest trio of new ships—the Wisconsin, Alabama and Illinois. Secretary Long has directed that the battleship which is to be built by the Union Iron Works, San Francisco, shall be named the Ohio. The Cramps will build the Maine and the Newport News Company the Missouri. It is probable that no more second-class battleships like the Maine and the Texas will be added to the navy, as the behavior and execution of the cruiser Brooklyn during the battle of July 3d proved that an armored cruiser is really a battleship of the second class. Congress having placed the national arm of the service on a fairly good basis should now turn its attention to the merchant navy, and enact such legislation as would tend to the upbuilding of the United States mercantile marine.

A SAFE CHANNEL INTO SANDUSKY.

William T. Blunt, assistant engineer to Col. Jared A. Smith, Corps of Engineers, U. S. A., was at Sandusky this week inspecting the work of dredging that has been going

on at the mouth of the bay for the past month. The United States dredge Maumee, which was engaged to do the work has now completed the channel and there is plenty of water from the "deep hole" to the lake. The average depth is about 18 feet and if masters of vessels coming in or going out will only exercise judgment when going through the channel it is believed no trouble will again occur this season. The channel has been marked with buoys and there is no reason why a vessel should get out of the course if the buoys are followed and the proper range is kept during the night or day.

CANADIAN PILOTS INEFFICIENT.

The attention of the Dominion Minister of Public Works was recently called to the number of serious accidents to ocean steamers on their way up the St. Lawrence to Montreal.

In a reply received on Tuesday by the Board of Trade at Montreal, all blame for recent accidents and disasters is placed on the shoulders of the river pilots, who, the Minister of Public Works says, are grossly inefficient.

LUMBER CARRIERS' ASSOCIATION.

It is believed in marine circles that had the Lumber Carriers' Association held out until September the profit which would accrue to its members from that time until the close of the season would more than repay them for the hardships they experienced while the association lived. Now that the demand for lumber tonnage has so greatly increased, the ex-members of the association greatly regret having broken up family ties. At present the outlook for the resuscitation of the association is most promising. There are a few sores which still remain to be healed, but when navigation opens, next spring, it is expected a strong association will be organized.

RETURNING OLD FOR NEW.

The Secretary of the Treasury has made arrangements to transport the cutter Morrill from the Norfolk navy yards to Milwaukee, to replace the Gresham. This cutter has been engaged in blockade duty off Cuba and is now having her armor removed at Norfolk. She has a speed of 11 knots, and is small enough to permit her passing through the Canadian canal locks without being cut in two, being only 145 feet 3 inches overall. The announcement that the new cutters built for the lakes were to be retained on the sea-coast brought protests from lake ports, and it is likely that pressure will be brought to bear to have other vessels detailed for the lake service until Congress makes appropriations for new cutters.

AN AGED CONSORT CALLED HENCE.

Mrs. Mary A. Gale, the late wife of Capt. Charles Gale, Sombra, Ont., was called hence at noon on Thursday last. Mrs. Gale was born in 1820, and had been married to Capt. Gale for 57½ years. She was the daughter of Capt. John Becker, who was known to all of the older members of the lake fraternity. Mrs. Gale was the mother of nine children, all of whom are living with the exception of one boy named Charles. Her eldest daughter is Mrs. Ellen Pearson, Anna, widow of the late Thomas E. Quayle, also Mrs. Emma Campbell and Mrs. Lizzie Palmer, all of Cleveland. John Gale, foreman Union Elevator, Chicago, Mrs. Ida Seafert, Chicago, Augusta E. Cundick, Warwick, Ont., and William S. Gale, Sombra, Ont.

The remains of Mrs. Gale were shipped to Cleveland and buried in Woodland cemetery on Saturday last, her daughters attending the funeral, though it was much regretted that her husband, Capt. Charles Gale, after carefully nursing his aged consort for two and a half years, was in too feeble a condition to attend her burial, but remains as he says, a marine nonagenarian on his beam ends riding at a foul anchor, or, and about fetching up on a lee shore for lack of something to back up his ground tackle with.

OLD ST. LAWRENCE RIVER STEAMERS.

Some of the many steamers which ply the waters of the St. Lawrence have an interesting history. The Magnet, now the Hamilton, was built in 1847. The Passport was built in the same year and is now the Caspian. The Kingston was the next built. She was burned at Chippewa Point, was rebuilt and came out as the Bavarian. She was burned a second time at Whitby, on the lake, where Capt. Carmichael and all the passengers were lost, but part of the crew saved. She was then rebuilt and put into service as the Algerian, and is now of the Mail line. The Grecian was lost in Split Rock rapids and her hull now lies there. The Columbian has been ashore on Cedar Island. All but one are now running on the river.

LAKE FREIGHT REPORT.

The expected advance in iron ore rates, helped, no doubt, by the slight advance in grain, and indications of the weather breaking up, may be said to have taken place, although shippers don't fully admit that the small chartering at 60 cents from the head of the lakes establishes the 55 cent Marquette and 50 cent Escanaba rate, yet these figures have been paid, and with the fall weather approaching, the figures are not likely to recede, in fact the raise has been indicated for several days past, as mentioned, with the cause assigned, in our last week's report.

Grain rates Chicago to Buffalo, went up very steadily to 1¼ cents on corn last Friday, although shippers resisted the ½ cent advance. On Wednesday a further advance of ½ cent was obtained, thus making the top notch in rates since last winter; this will also have a steady effect on ore rates and marks ¼ cent advance for the week with a firm market. Duluth to Buffalo is also quoted at an advance of ¼ cent, at least a large steel steamer loading at 1¾ cents has been chartered for another cargo at the 2 cent rate. The canal rate is now quoted at 2¼ cents on corn.

The coal freight market is firm though no advance has yet been made and 25 cents Buffalo to Lake Michigan, 20 cents Duluth is still the going rate with inquiries for tonnage and an abundance of coal ready for shipment so that an advance may be looked for at any time from Buffalo as well as Ohio ports, though the latter ports are also quoted at last week's figures.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset by reversing the east bearings given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting:

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Sunrise.	Bearing.	Bearing.
September 23	East	East
September 26	E. 2° S.	E. ½ S.
September 29	E. 3° S.	E. ¼ S.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Sunrise.	Bearing.	Bearing.
September 23	East	East
September 26	E. 2° S.	E. ½ S.
September 29	E. 3° S.	E. ¼ S.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Bearing.	Bearing.
September 23	East	East
September 26	E. 2° S.	E. ½ S.
September 29	E. 3° S.	E. ¼ S.

LAKE SUPERIOR, LAT. 48° N.

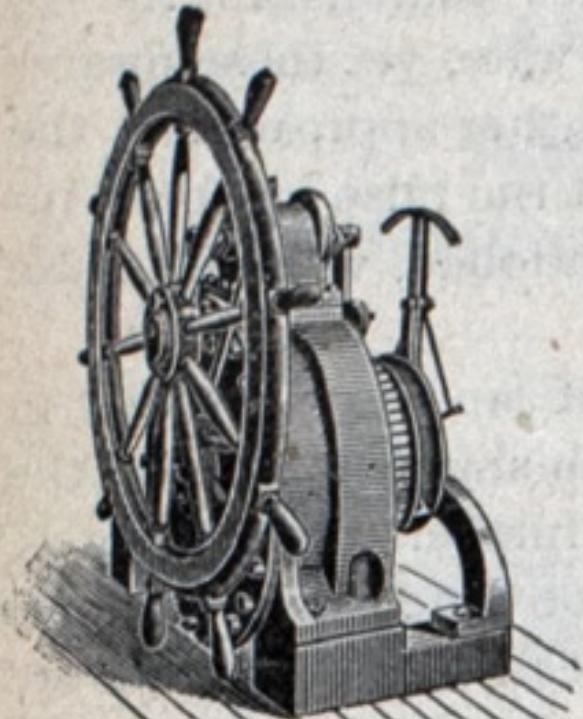
Sunrise.	Bearing.	Bearing.
September 23	East	East
September 26	E. 2° S.	E. ½ S.
September 29	E. 3° S.	E. ¼ S.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied, will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

IRON FOR GERMAN SHIPBUILDING.

A German journal devoted to industrial matters is pleased at the prospect which the German iron industry at present has of being able to supply the iron used in the shipbuilding yards of Germany. Hitherto foreign firms have supplied the greater part of the iron used by German shipbuilders. Great Britain has been the chief purveyor in this respect, as the British works were in a position to furnish the material both more cheaply and at a quicker rate of production than their competitors. Now, however, the German Association of Iron and Steel Manufacturers have been for more than a year engaged in discussing with shipbuilders and iron founders the best means of supplying their shipbuilding yards with German iron. This seems to be possible only if there is a considerable reduction in the price of iron, by some sacrifice on the part of the yards, and by the willingness of the railway management to reduce the cost of transport. The iron industry has gained much strength by the formation of a union of German ironmasters, and this union is in a position to guarantee the due supply of German iron for use in the shipbuilding yards of the Fatherland. The chief factor to be reckoned with was a proportionate reduction in the rate of freight on the German railways. On the Prussian State railways a reduction in the rates of freight for iron destined to be used in German shipbuilding yards has been approved and agreed to.

Queen City Patent Hydraulic Steerer.



The best and most reliable.
Generates no heat in pilot house.
Has large hand wheel.
Can be changed from power to hand steering instantly.
A favorite with pilots.

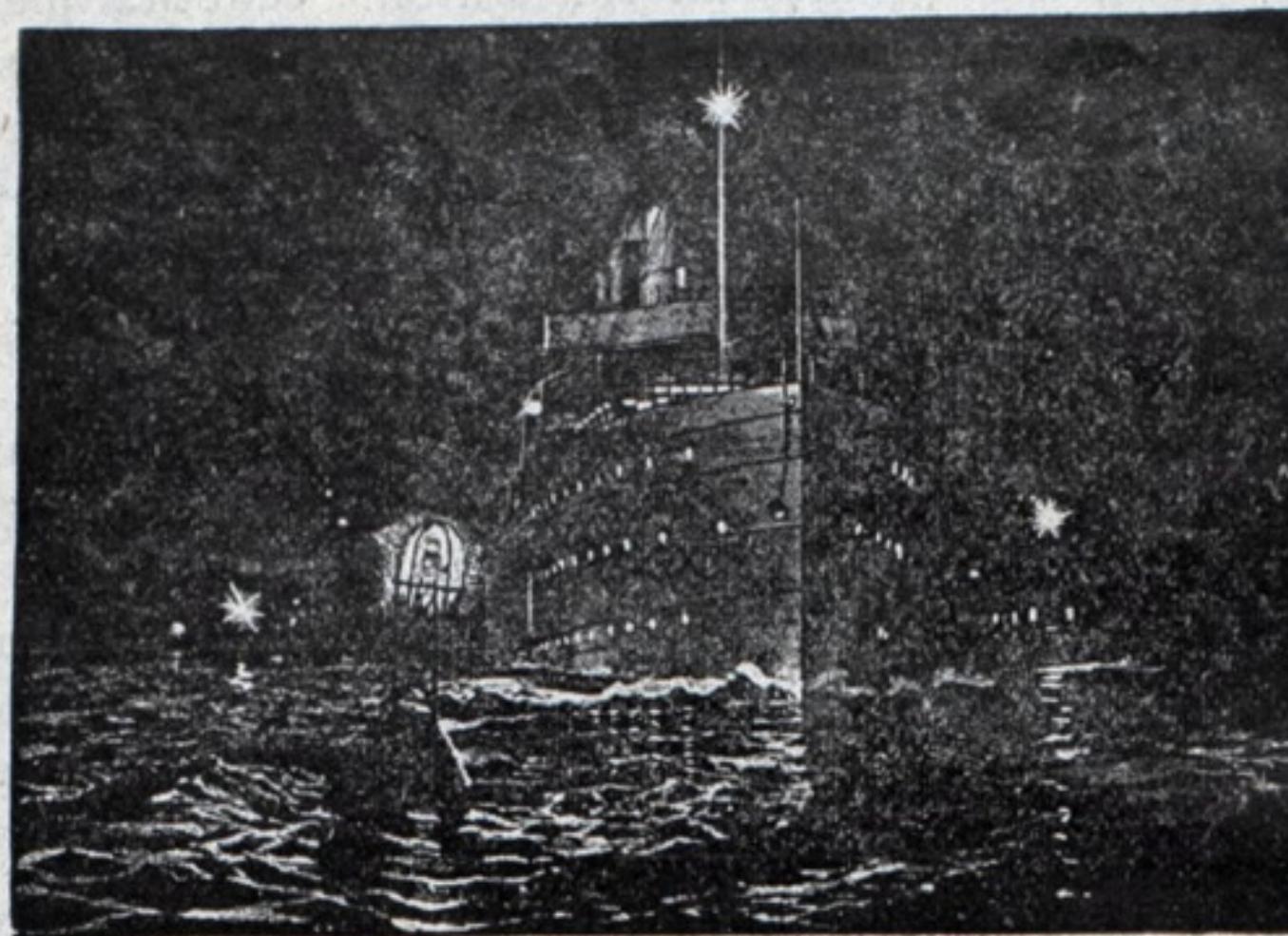
Send for References.

Queen City Engineering Co.

BUFFALO, N. Y.

Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian, and United States Light-House Departments for channel and harbor lighting. Over 800 gas buoys and gas beacons in service.



Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

Controlled by

**THE SAFETY CAR HEATING
AND LIGHTING CO.**

160 Broadway, New York City.

Straits of Mackinac Chart

The Hydrographic Office has just issued a new survey of the Straits of Mackinac, extending from Sturgeon Point and Thunder Bay on the East, to a meridian running through Point Betsie on the West.

This survey is the latest and best. The chart is on a large scale, measuring about 3x4 feet. Price \$1.00.



THE MARINE RECORD,
Western Reserve Building,

agents for all Hydrographic Office Charts and publications.

WM. WILFORD'S

Matchless Waterproof Cloth
...and Societe Anonyme De Veluwe,
(Japan Paint).

EDWARD A. BUNKER, Sole Agent,

...NEW YORK CITY.

20 BROAD STREET.

DAMAGE TO SHIPPING BY GALVANIC ACTION.

A very interesting case has recently been fought before the Italian law courts. The captain of the port of Leghorn, Cavaliere Alceste Torrini, was the plaintiff in an action against the owners of certain wooden yachts, with coppered bottoms, lying in the Darsena part of the harbor of Leghorn, to enforce a notice on the owners for the removal of such vessels from that part of the harbor. This notice was made on the grounds that the new warships and other iron and steel vessels lying in that part of the harbor were damaged by galvanic currents set up from the copper bottoms of the wooden yachts, the contact with the steel vessels being due to ropes which were made fast to different buoys in the harbor or basin. The fact of the damage to steel and iron ships having arisen and of its being due to this cause was clearly established before the court, and the captain's order for the removal of the wooden yachts, with coppered bottoms, from the Darsena harbor of Leghorn, was consequently confirmed by the court. Prof. Vivian B. Lewis, in a paper read before the Institute of Naval Architects, some years ago, stated that damage is liable to arise from such a cause, and he also put forward the same theory in his book "Service Chemistry." The fact of the existence of such a danger must be known to very few shipowners, but it is quite possible that the not infrequent phenomenon of an abnormally rusty bottom of some steel ship might be traced to her having been in galvanic contact with some copper-sheathed wooden vessel. But Fairplay is informed that in Italy there is another cause for damage at work, which is not unlikely to manifest itself before long, in so far as several anti-fouling effects solely upon the presence of a very large percentage—30 to 40 per cent.—of metallic copper. Such compositions are applied to the bottoms of a large number of Italian ships, in conjunction with a coat of priming, which is supposed to serve as an insulating medium. However effective powdered copper may be as an anti-fouling medium, our contemporary believes that it cannot be applied with impunity to iron and steel ships. In England, anti-fouling paints containing metallic copper are also made, but in no case are they applied to iron or steel ships; they are only used for wooden ships, such as fishing vessels and wooden trawlers, on which they give good results, but the manufacturers of compositions in this country who supply iron and steel ships have long realized that paints contain-

ing metallic copper are absolutely unsuitable for application on steel vessels, a fact on which Prof. Vivian B. Lewis expatiated in his book referred to.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo	490,000	1,553,000	787,000	34,000	90,000
Chicago.....	655,000	7,659,000	706,000	104,000	72,000
Detroit	109,000	137,000	16,000	11,000	4,000
Duluth and Superior	1,590,000	1,263,000	97,000	79,000	216,000
Milwaukee.....	7,000	.....	5,000	.....	26,000
Montreal.....	57,000	4,000	273,000	21,000	6,000
Oswego.....	.....	.....	.....	.....	.....
Toledo.....	329,000	278,000	289,000	33,000	.....
Toronto.....	14,000	.....	7,000	.....	5,000
On Canal.....	.....	1,393,000	116,000	.....	.....
Grand Total.....	10,188,000	19,247,000	4,701,000	625,000	660,000
Corresponding Date, 1897.....	17,140,000	33,737,000	10,753,000	2,425,000	1,394,000
Increase.....	1,782,000	1,887,000	4,400	26,000	222,000
Decrease.....	.....	.....	.....	.....	.....

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

ENGLAND, JAPAN AND UNCLE SAM.

Perhaps there never will come a time when we shall be in a stronger position than now to enforce our demands in an international congress. Our naval strength has startled Europe. England's interests are identical with our own. She is preaching the doctrine of open ports, and has shown her willingness to fight for them.

Japan, with her efficient navy and important strategic position, has just been robbed of the fruits of victory by the three powers who will most strongly oppose us. With Japan to aid Anglo-Saxon alliance in diverting a certain amount of naval strength, we could, with the assistance of the naval stations of England in the Mediterranean, bottle up the Black sea and perhaps, the Mediterranean itself. With our own western frontier resting on the shores of the Pacific, and with our Hawaiian and Philippine naval station to co-operate with Japan and the fortunately situated British islands of Hong Kong and Singapore, we could effectually cut off the communications of Europe with the Far East. Indeed, it is a question whether an alliance having so many

points of strategic advantage in all parts of the globe could not shut off the continent of Europe from every other part of the world. In either case, all their colonies would fall into our hands. As in other general wars of modern times—the Wars of the Spanish Succession, the Seven Years' War, and the wars of Napoleon—the sea power would, in the end, have substantial gains.—Truxton Beale in the Forum.

A LOW DREDGING BID.

There is a lively scrap on in Waukegan this week between the city authorities and Carkin, Stickney & Cram, of Detroit, the contractors who recently were awarded the work of dredging the harbor. They have now declined the job, stating that they cannot get a dredge at present. Their bid was 14 cents a cubic yard, and the next lowest bidder made a price of 18½ cents. The firm failed to put up a check with their bid, but as the commercial agencies gave them a good rating, they were given the contract. The city attorney, of Waukegan, has written the firm, notifying them to take the work or be held liable for the extra cost if the contract is relet to a higher bidder.

RESTORING THE DROWNED.

Dr. Laborde, the supervising surgeon of the hospital at Lisieux, in France, appears to have established the fact that the clinching of the jaws and the semi-contraction of the fingers, which have hitherto been considered signs of death, are, in fact, evidences of remaining vitality. After numerous experiments with apparently drowned persons, and also animals, he concludes that these are only signs accompanying the first stage of suffocation by drowning, the jaws and hands becoming relaxed when death ensues.* This being so, the mere clinching of the jaws and semi-contraction of the hands must not be considered as reasons for the discontinuance of efforts to save life, but should serve as a stimulant to vigorous and prolonged efforts to quicken vitality. Persons engaged in the task of resuscitation are, therefore, earnestly desired to take hope and encouragement for the life of the sufferer from the signs above referred to, and to continue their endeavors accordingly. In a number of cases Dr. Laborde restored to life persons whose jaws were so firmly clinched that, to aid respiration, their teeth had to be forced apart with iron instruments.

*The muscular rigidity of death (rigor mortis) occurs later, after the tempo ary relaxation here referred to.

NOTES.

MR. S. J. P. THEARLE, one of the senior surveyors to Lloyd's Register of Shipping, has been appointed principal surveyor for the Tyne district. This is one of the most influential positions in Lloyd's. Mr. Thearle, accompanied by Mr. Conish, visited the lakes a few years ago and he made many friends during that tour who will be pleased to hear of his advancement. For the last sixteen years Mr. Thearle has been attending to the Lloyd's Register interests on the Clyde, and during that period his high professional attainments earned for him the respect of the entire shipbuilding community. He is the author of several leading text-books dealing with naval architecture, and is a shining light in shipbuilding and engineering circles.

ENGINEERING skill is likely to play an important part at Vladivostock, the terminus of the Siberian railway, where for over four months the port is blocked up with ice, rendering shipping traffic impossible. For many years the Russian authorities have been endeavoring to overcome these natural difficulties, and some time ago ice-breaking ships were proved practically useless. It is now proposed to reclaim the narrowest part of the Tartar strait between Saghalien and the Russian mainland. The theory of such an undertaking is that, if this is done, the cold current which enters the Japan sea from the Arctic via Bering strait will be checked, and the passage of the warmer tide, coming from the south through the Tshuma strait, will make the water on the coast of Japan as warm all the year round.

A RECENT invention by Carl Wegener depends upon feeding the furnace with powdered coal, instead of the "well screened" lumps which have hitherto been regarded as the most advantageous form of such fuel. The coal dust is fed into the fire from a container in front by means of a tube which is kept in motion by the draught, and has the effect of scattering the fuel over the furnace in such a way that it is at once inflamed without smoke and with very little ash. Coal of comparatively low quality can be economically used in this powdered form, and the only drawback to the process seems to be the necessity for using a separate machine

for the grinding of the coal to powder. On the other hand, the slack, or dust which forms a necessary by-product of the coal industry will find here a field for employment, which will be much appreciated by owners of mines and merchants generally.

JUDGE GROSSCUP well says, in his recent address at Saratoga, "we need these islands as an integral part of the naval force, without the display of which we can never obtain a proper share in her commerce or protect it after it is obtained; we need them in the interest of the merchant ships which will for all time carry that commerce on; we need them as strategic points in the naval contest with any power on the earth; we need them that we may draw physically close to that quarter of the globe in which we wish our influence to be felt and our commerce to expand; we need them, above all other considerations, as securities toward peace, that character of peace bond all nations respect."

THE chief mine inspector of Ohio has issued his table of figures to show the total amount of coal, anthracite and bituminous, shipped from all Lake Erie ports to upper lake points during the season of 1897. These figures are probably the best figures available to show the extent of this business, as it is well understood that the custom house records, owing to defects in the law governing entries and clearance of vessels, are very far from showing the traffic in its true proportion. These figures show a total of 7,977,248 tons of coal shipped from Lake Erie in 1897, of which 2,745,130 tons are anthracite, and 5,252,118 tons bituminous. Of the bituminous coal 3,326,814 tons were from Pennsylvania mines and 1,355,138 tons were from Ohio mines, 565,166 tons of West Virginia coal was shipped from Lake Erie.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, in their weekly freight report state that the advancing tendency in the freight market, to which we referred in our last report, has continued, and we can to-day report grain freights firm at 3s. 9d. to Cork, f. o. from range of ports, both for September and October loading, and the rate for large vessels to picked

ports at 3s. 4½d., as opposed to owners' demands of 3s. 10½d. @ 4s. for the former and 3s. 6d. for the latter business. Berth freights are likewise pursuing an advancing tendency, and we expect shortly to be able to advise that the regular lines are fully booked up for the next month or two at steadily improving figures. Cotton freights equally show increased strength, especially from the Gulf ports, and it appears likely that freights from the Atlantic ports will likewise show some advance in the near future. The enquiry for time boats is less urgent, as the leading charterers appear to be pretty well filled up, and the same may be said in respect to timber freights, although the rates occasionally obtained for this business continue high, owing to the competition of other cargo from the Gulf.

We have nothing new whatever to report in regard to sail tonnage. The market remains exceedingly quiet, with but little enquiry, and without appreciable change in rates.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DISTRICT,
CHICAGO, ILL., September 17, 1898.

Notice is hereby given that a black gas buoy, showing a fixed white light, will be established on or about September 20th, 1898, in 5½ fathoms of water about 300 feet north of a sunken 3-masted tow barge which foundered during the night of September 4th, near White Shoals, Straits of Mackinac. This wreck lies in 30 feet of water, 1¼ miles N. W. by W. ¼ W. from White Shoal light-vessel, with the three masts standing. This buoy will replace the temporary black spar buoy established September 11, 1898.

Bearings true and distances in statute miles:

Seul Choix Pointe light-house N. 83° W. (W. 56 N.) 36½ miles. Skilligallee light-house, S. 2° 24' W. (S. 4 W.) 11¾ miles. Waugoshance light-house, S. 39° E. (S.E. ½ S.) 5¾ miles.

By order of the Light-House Board.

C. O. ALLIBONE, Commander, U. S. Navy,
Inspector 9th L. H. District.

TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength of plates one-quarter inch thick, upward of 78,000 lbs. per square inch. Torsional strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shaftings, etc. Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

The Ansonia Brass & Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet.

19-21 Cliff St., NEW YORK.

INCORPORATED 1794.

Insurance Company of North America

CAPITAL, Paid up in Cash,
ASSETS, - - - - -

\$3,000,000.00
10,023,220.93

CHARLES PLATT, President.
GREVILLE E. FRYER, Sec'y and Treas.
T. HOUARD WRIGHT, Marine Secretary.

EUGENE L. ELLISON, Vice President.
JOHN H. ATWOOD, Assistant Secretary.
GEORGE L. McCURDY, Manager.
CHICAGO, ILL.

Lake Marine Department,

GEORGE L. McCURDY, Manager.
CHICAGO, ILL.



MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Co.

Organized 1842.

Office 51 Wall Street, NEW YORK

Insures against Marine and Inland Transportation Risks and issues policies making Loss Payable in England.

Assets over \$10,000,000 for the Security of its policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

A. A. RAVEN, Pres.

F. A. PARSONS, V. P.

CORNELIUS ELDERT, 2d V. P.

THEO. P. JOHNSON, 3d V. P.

J. H. CHAPMAN, Sec'y.

Chas. E. & W. F. Peck,

58 William Street, New York City.

Royal Insurance Building, Chicago, Ill.

C. T. BOWRING & CO.

5 and 6 Billiter Avenue, E. C., - London, England.



Insurance

BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.

PARKER & MILLEN, 15 Atwater Street, W., Detroit, Mich.

J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.

LA SALLE & CO., Board of Trade Building, Duluth, Minn.



Are prepared to make rates on all classes of Marine Insurance on the Great Lakes, both CARGOES AND HULLS.

NEW YORK.
PHILADELPHIA.
BOSTON.

BALTIMORE.
SAN FRANCISCO.
NEW ORLEANS.

Johnson & Higgins,

Average Adjusters,
And
Fire and Marine
Insurance.

Special Facilities for Placing Marine Lines.

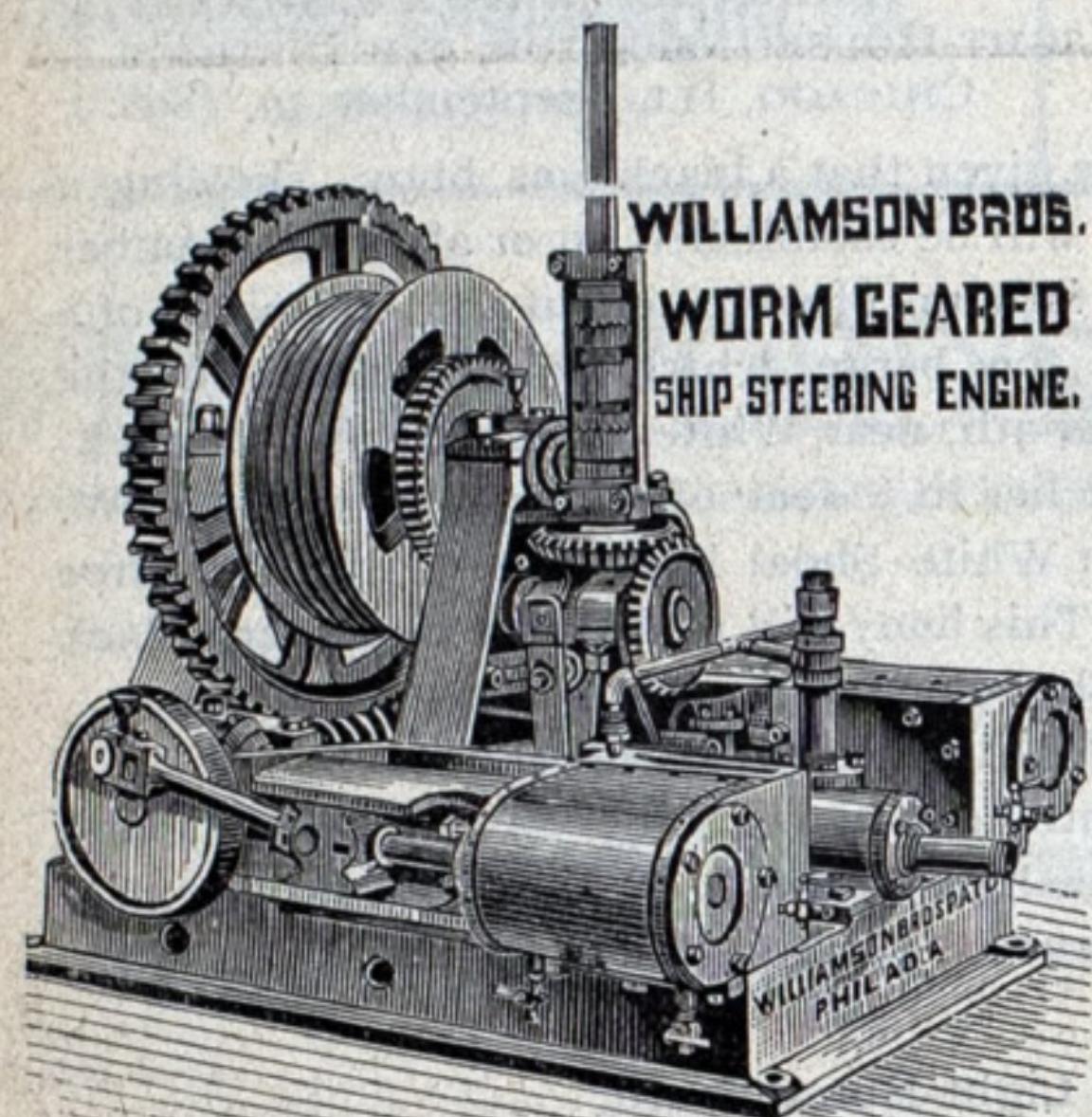
Prudential Bldg.

BUFFALO, N. Y.



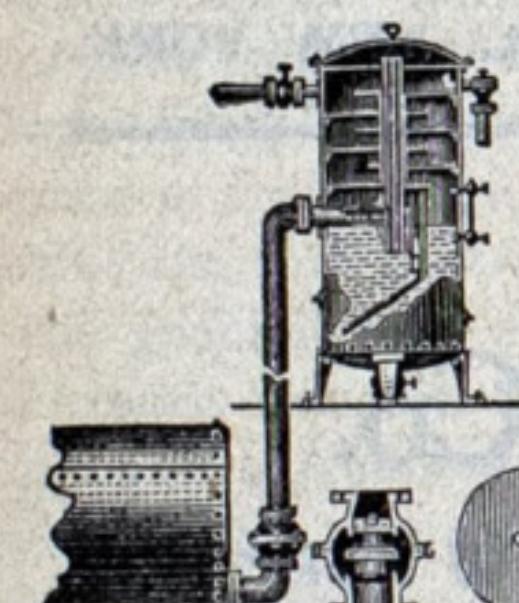
WILLIAMSON
BROS.,

COR. RICHMOND AND YORK STS.,
Philadelphia, Pa.



HOISTING and SHIP ENGINES
STEERING ENGINES.

With either Fractional, Spur or Worm Gear of
Various Patterns to Suit all Purposes.



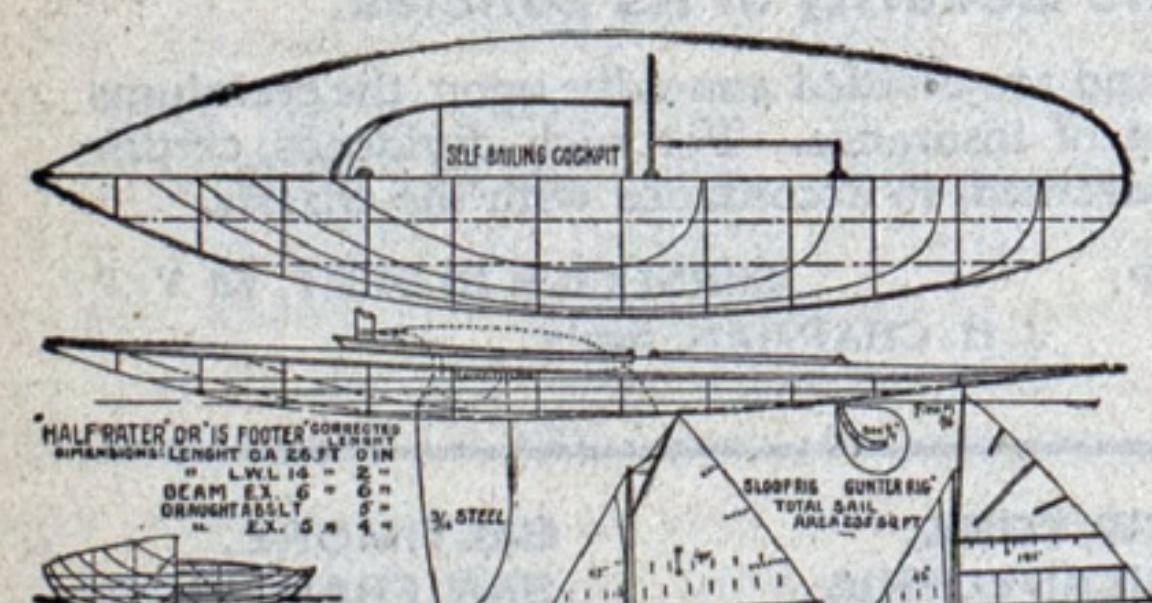
Buffalo Feed Water Heater AND PURIFIER.

Made in all Sizes and to Suit all Conditions.

ROBERT LEARMONT, 200 Bouck Ave., BUFFALO, N. Y.

Send for Catalogue.

Boats for Amateur Builders.



All designs shown in my new "ALBUM OF DESIGNS" to scale as indexed or enlarged full size very cheap.

SPECIAL DESIGNS TO ORDER.

Patterns, Moulds and Instructions to Amateur Builders.

Small Steam and Sailing Craft Built and Rigged entirely or in part.

Stem and Stern Posts, Keels, Frames furnished worked in the wood. All kind of boats set up frame and shipped "knockdown" to any part of the world.

SEND 50 CENTS FOR 72-PAGE "ALBUM OF DESIGNS."

FRED W. MARTIN, Yacht Designer, North Chicago, Ill., FORMERLY RACINE, WIS.

Youghiogheny River Coal Co.

Miner and Shipper of

OCEAN,
YOUGHIOGHENY
GAS AND STEAM

COAL.

General Office:
Erie, Pa. Long Distance 'Phone 409.

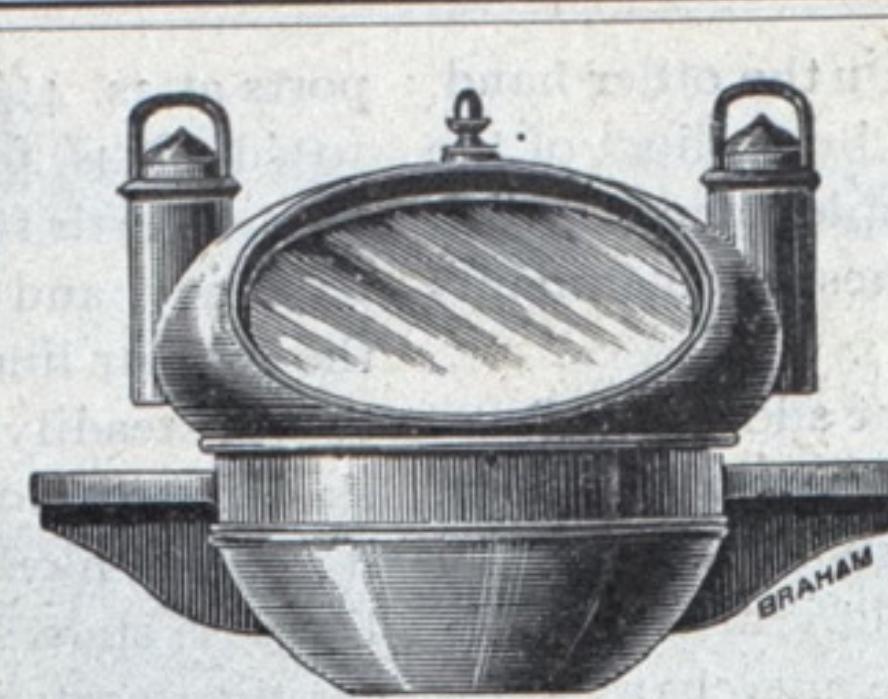
Shipping Docks:
Ashtabula, O. Long Distance 'Phone 76.

VESSELS FUELED AT ALL HOURS

ELECTRIC LIGHT.

WITH OCEAN COAL ONLY,
BY STEAM LIGHTER OR CAR DUMP.

Patrons, Friends and Subscribers will confer a favor by mentioning the MARINE RECORD where they are led to make purchases through our advertising columns.



FRANK MORRISON,

Compass Adjuster
and manufacturer of
Nautical Instruments
Compasses, Barometers, Patent Logs, Binnacles, Steam
Gauges, Marine Glasses, Engine Indicators.

All Nautical Instruments Carefully Repaired.
OFFICE WITH UPSON, WALTON & CO., 161 RIVER ST., CLEVELAND, O.

A Valuable Series
of.....

Nautical Works.

ELEMENTARY SEAMANSHIP. By D. Wilson Barker. Illustrated; 12 mo.; cloth; \$2.00.

KNOW YOUR OWN SHIP. A simple explanation of the stability, construction, tonnage, and freeboard of ships. Specially arranged for the use of ships' officers, superintendents, draughtsmen, and others. By Thos. Walton, naval architect. Lecturer to ships' officers, government navigation school. Illustrated; 12 mo.; cloth; \$2.00.

NAVIGATION. Theoretical and practical. By D. Wilson-Barker, R. N. R., and William Allingham. Illustrated; 12 mo.; cloth; \$1.50.

LATITUDE AND LONGITUDE. How to find them. By W. J. Millar, C. E. With diagrams; 12 mo.; cloth; \$1.00.

PRACTICAL MECHANICS. Applied to the requirements of the sailor. By Thos. MacKenzie. Illustrated; 12 mo.; cloth; \$1.50.

A MEDICAL AND SURGICAL HELP FOR SHIPMASTERS. Including first aid at sea. By William J. Smith. \$2.25.

HINTS ON THE LEGAL DUTIES OF SHIPMASTERS. By Benedict W. Ginsburg, M. A., LL. D., barrister-at-law. \$1.75.

Copies of any of the above books, or any others relating to steam power or shipbuilding, in any of their details, can be had by addressing



The Marine Record,

Third Floor, Western Reserve Building,
Cleveland, Ohio.

Paddle Wheel Machinery

Our knowledge of river navigation is earned through long experience and exceptional opportunity. We design and build the entire and complete outfitts of driving machinery for powerful light draft vessels, having the best of modern shop facilities to aid us in doing all the work. Write to us before you act.

MARINE IRON WORKS
Station A. CHICAGO.

Maurice & Williams,
COMPASS ADJUSTERS,
AND NAUTICAL EXPERTS.

ROOM 13,
240 SOUTH WATER STREET.
CHICAGO.
'PHONE, 273 MAIN.

Compasses adjusted for deviation and deviation tables supplied. Great facilities for doing the work by day or night, in an hour or two.

Instruction given in Navigation and Nautical Astronomy. Correct magnetic courses furnished for all parts of the lakes. Repairing of nautical instruments attended to.

The Cuddy-Mullen Coal Co.

Miners and
Shippers of

STEAM COAL

FUELING DEPARTMENT
FACILITIES. * * * *

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg: Four Pockets; Three Steam Derricks
SANDWICH—Fourteen Pockets and Two Steam Derricks.

"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson Docks,) Equipped with Pockets and Steam Derricks.

GOOD
COAL.

COURTEOUS
ATTENTION

QUICK
DISPATCH.

General Offices, Perry-Payne Bldg., Cleveland, O.

THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin, Wilkesbarre Anthracite,
Youghiogheny, Mansfield, Pittsburg

Vessel Fueling a Specialty

by steam lighter or car dump,
at all hours. Electric light.

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

...Coals

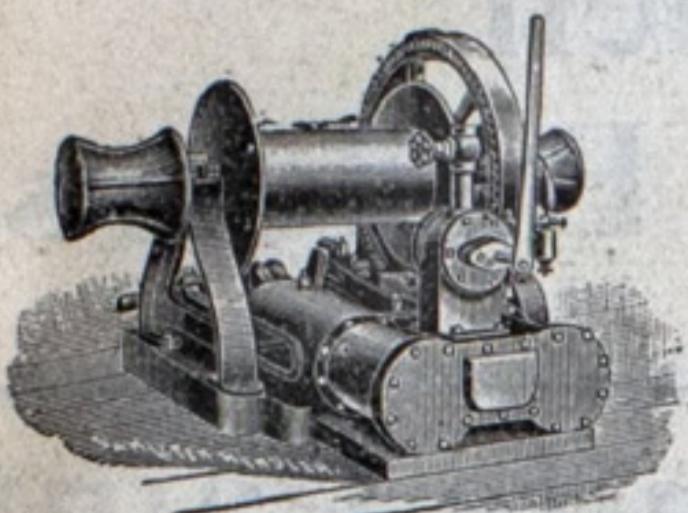
THE CHASE MACHINE COMPANY, ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF
Fog Whistle Machines, Hoisting Engines, Steering Engines, Automatic Towing Engines,
Power and Drop Hammers, and other Machinery. Engineers' Supplies and General Jobbing.

111 ELM STREET.

TELEPHONE, MAIN 994.

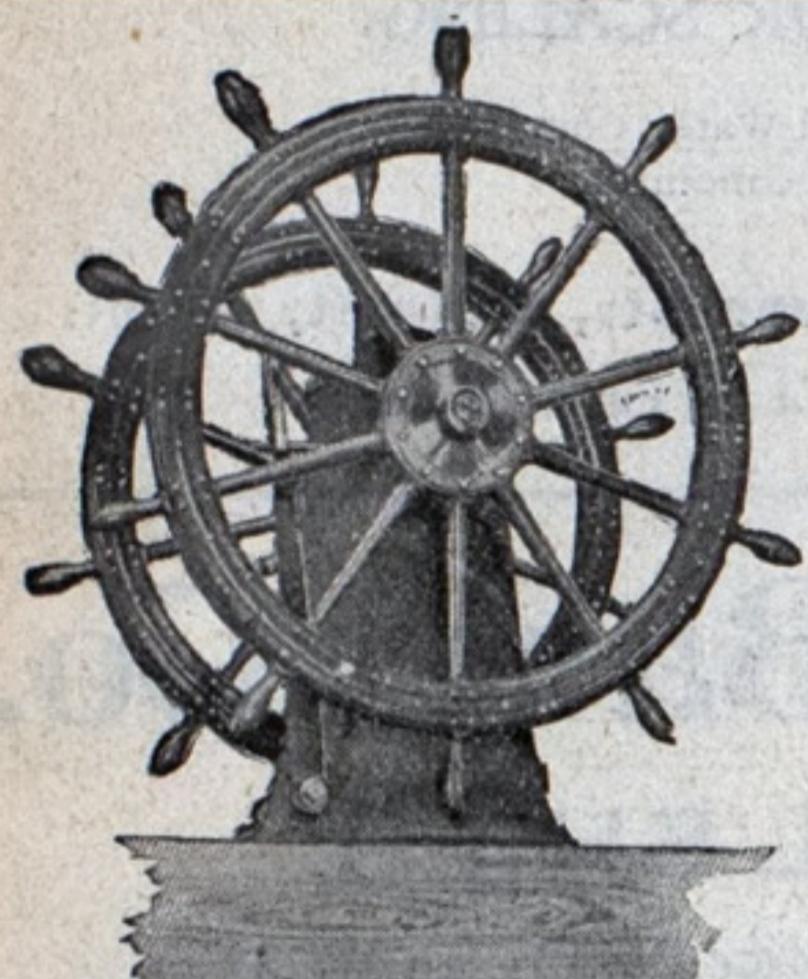
CLEVELAND, O.



Dock and Deck Hoists

ALL KINDS OF

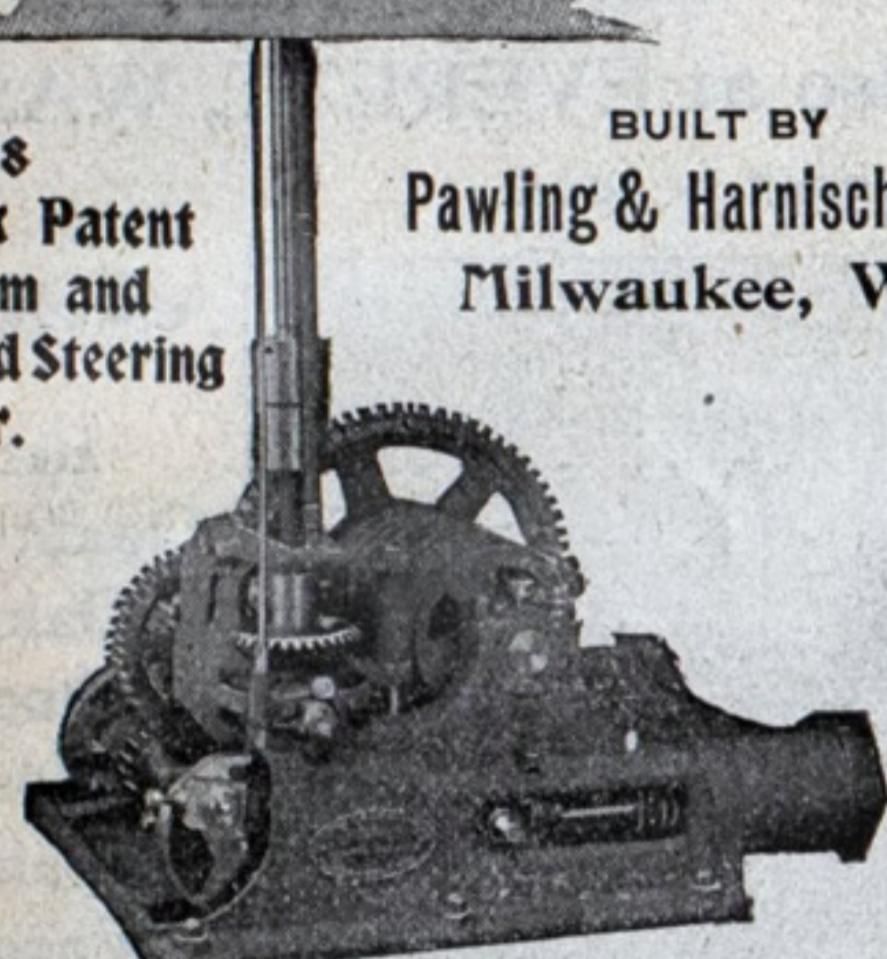
Machinery and Friction Hoists.

Send for Prices
and Circulars.JACKSON & CHURCH,
Saginaw, Mich.

Simplest,
Strongest
and most
Reliable.
Changed
from Steam
to Hand or
back by one
lever in less
than one
Second.

No. 8
Beck Patent
Steam and
Hand Steering
Gear.

BUILT BY
Pawling & Harnischfeger,
Milwaukee, Wis.



DONNELLY CONTRACTING CO.

896 ELLICOTT SQUARE, BUFFALO, N. Y.

CONTRACTORS AND CONSULTING ENGINEERS,
HARBOR AND CANAL WORKS, ETC.

BARRY'S—CHICAGO.

....DON'T FORGET THAT....

Barry Bros.' Independent Tug Line

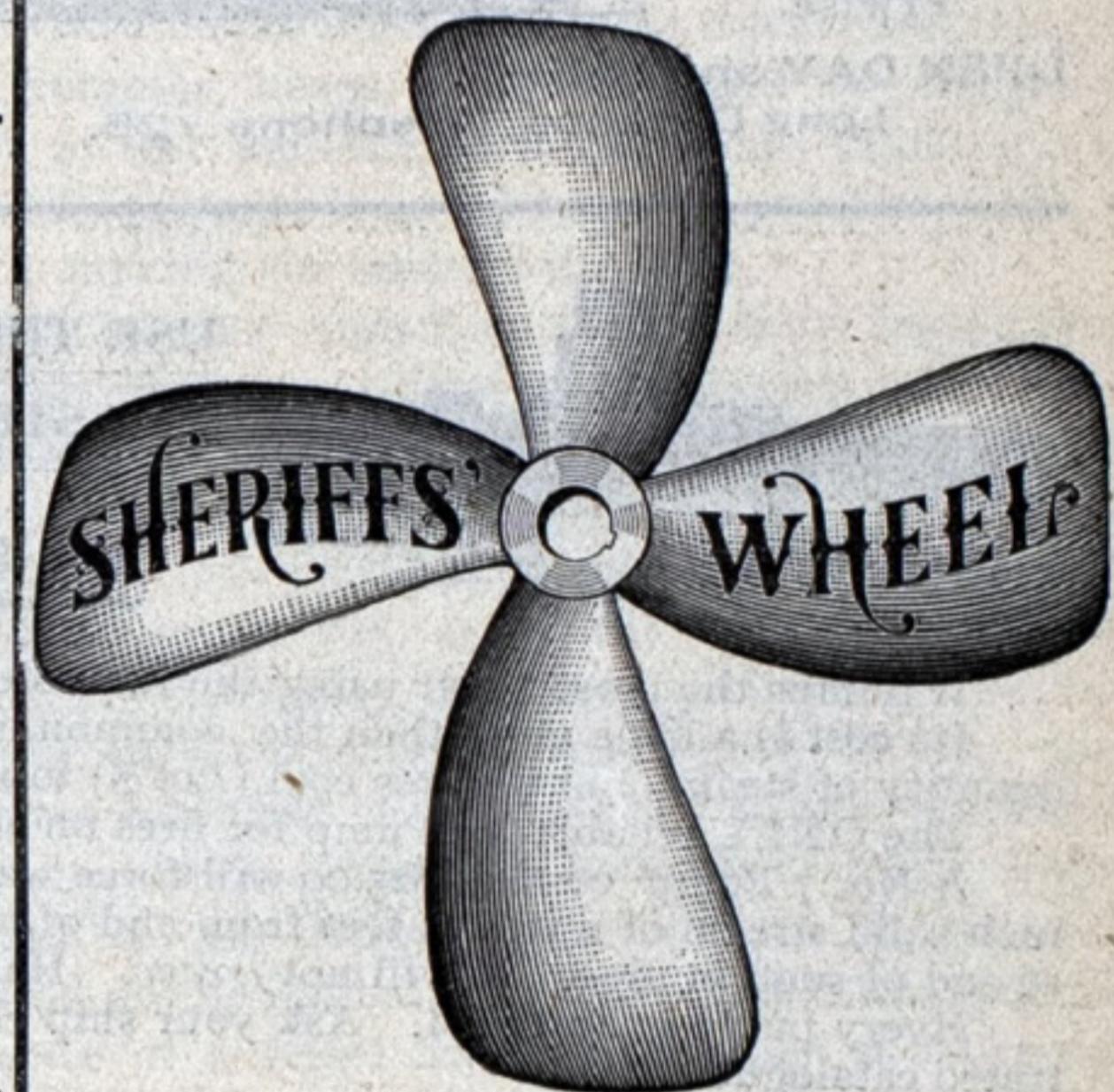
Have a Wrecking Outfit. We have purchased the Grummond Wrecking Appliances, and are prepared to offer our patrons good service.

Office, 240 South Water Street.
TELEPHONE, MAIN 273.

Three Long Whistles Call our Tugs.

SHERIFFS MFG. CO.

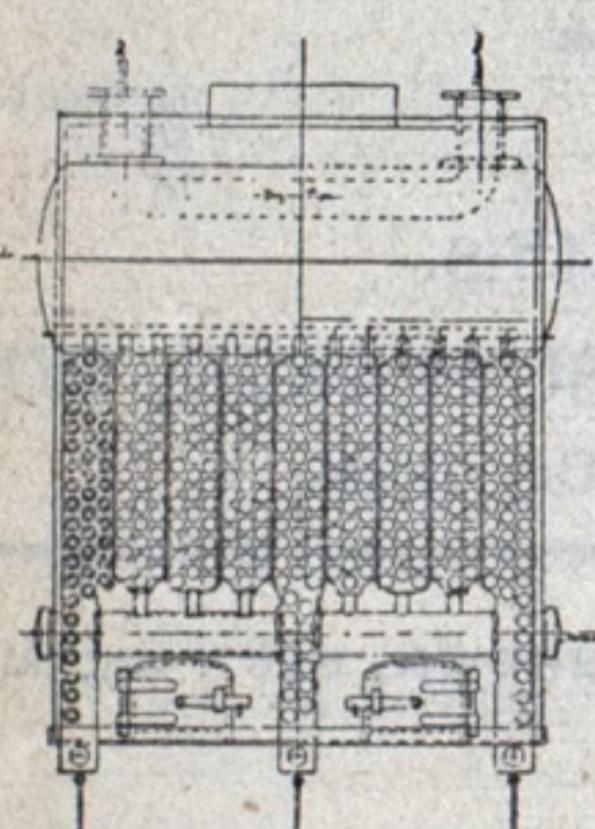
ESTABLISHED 1854.



MILWAUKEE, WIS.

FRONTIER

IRON WORKS, Detroit Mich. MARINE ENGINES.



26 HANCOCK AVE., DETROIT, MICH., Feb. 9, 1897.

E. H. BRIDGES, Bay City, Mich.:
Dear Sir.—Replying to yours of the 9th, I have to say that I think the Flajole the best form of Water Tube Boiler made. The one I have seems a perfect steamer, and the question of durability seems the only one yet undecided, and that only time can tell. Yours truly,
R. J. CRAM.

The Flajole Sectional Water Tube Boiler.

Combines Small Space, Economy and Durability.
Easy of Access for Repairs.

JOHN A. FLAJOLE, Cor. 2d and Saginaw Sts., Bay City, Mich.

VESSEL SUPPLIES. Tel. Main 3411.

D. C. DEEGAN,

Meats,
Groceries and
Provisions.

24 Rush Street.

CHICAGO, ILL.

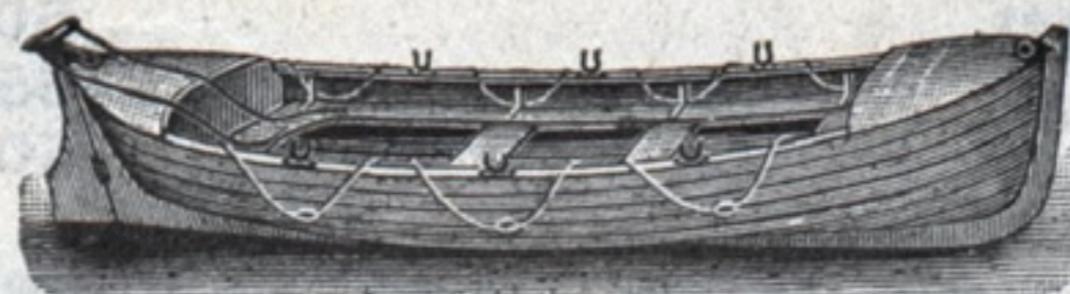
NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. **Consolidated Cork Life Preservers.** Superior to all others. **Rings Buoys and Fenders.** SAFEST CHEAPEST. Approved and adopted by U. S. Board of Supervising Inspectors.

Also adopted by the principal Ocean, Lake and River Steamer Lines as the only Reliable Life Preserver. Vessels and trade supplied. Send for Catalogue.

Awarded four medals by World's Columbian Exposition.

METALLIC
and
WOODEN
LIFE
BOATS.



Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest, cheapest and most compact Life Raft known. Send for illustrated catalogue. Get our prices before buying elsewhere.

D. KAHNWEILER, 437 Pearl St., New York City.

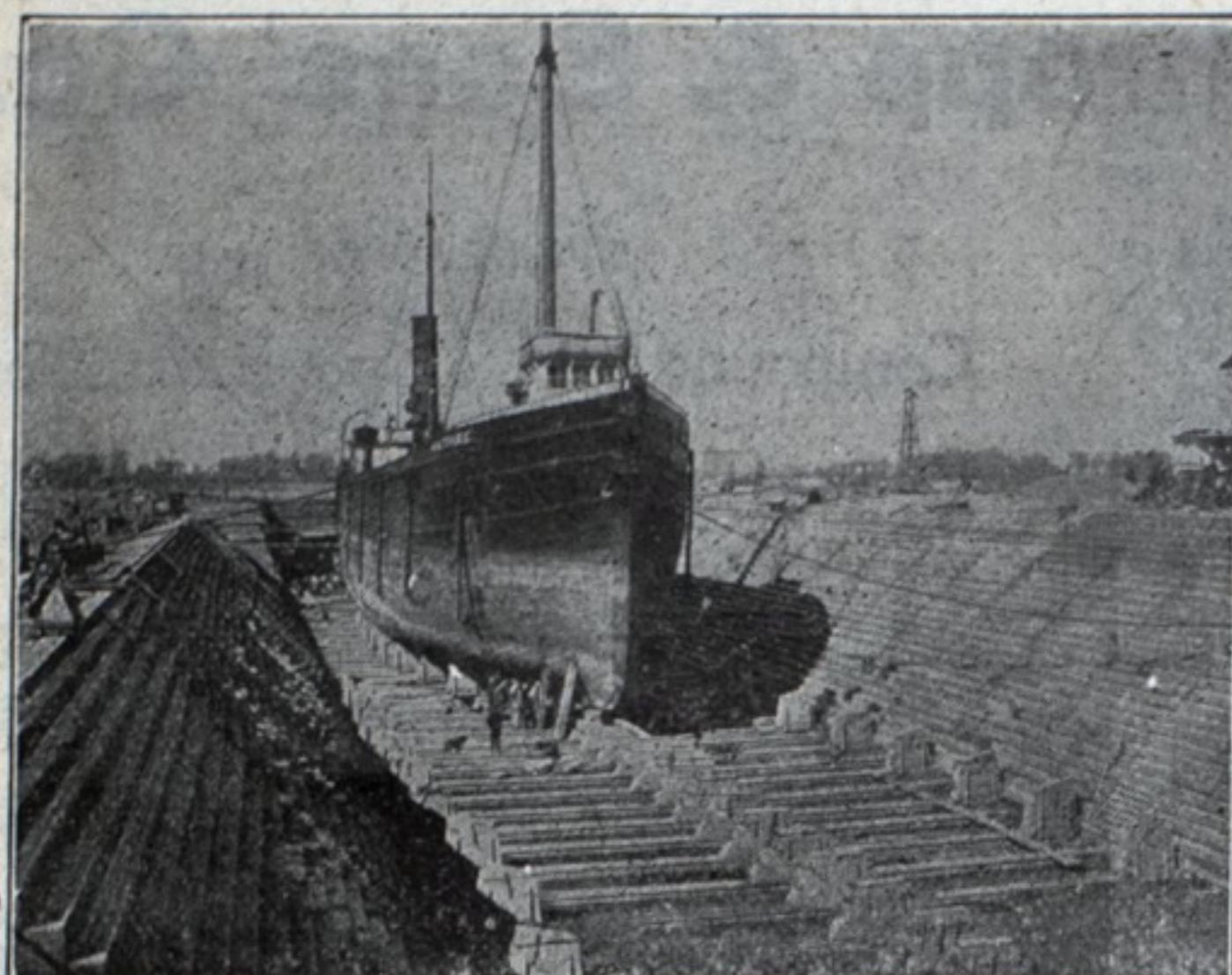
Dan'l McLeod,

MARINE SURVEYOR AND
APPRAISER.

ALL HULL DAMAGE CASES
PROMPTLY ASSESSED.

ORDERS SOLICITED.

713 Perry-Payne Bldg., Cleveland, O.



Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

Metal
and
Wooden
Ship Builders.

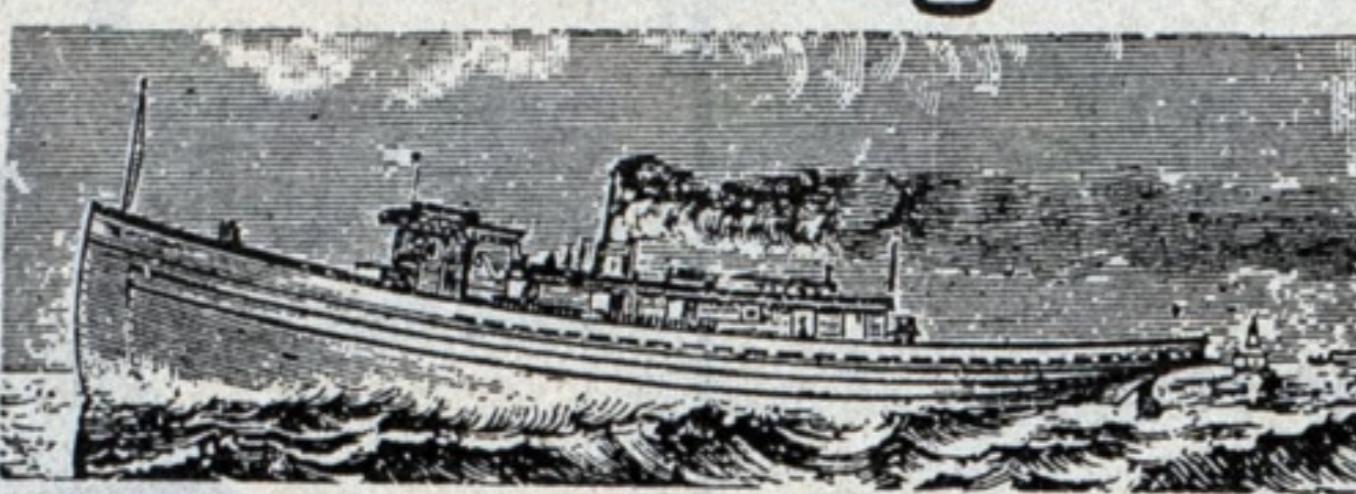
H. A. HAWGOOD, Pres't.
PHILIP MINCH, Vice-Pres't.

C. A. MORGAN, Gen'l Mang'r.

J. A. SMITH, Sec'y.
J. R. SPRANKLE, Treas.

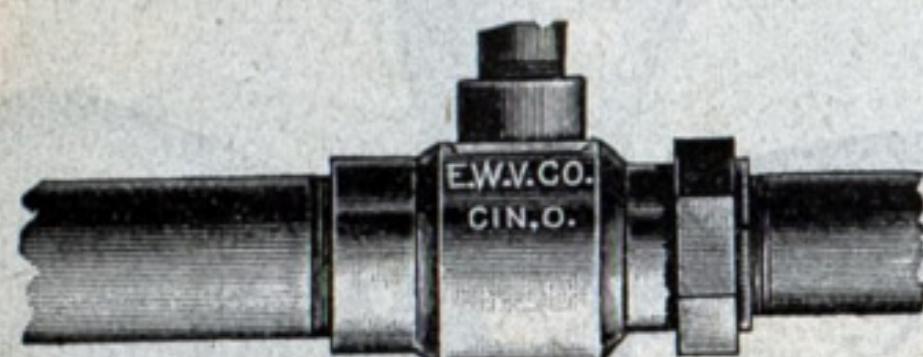
The Cleveland Tug Company,

First-class Tugs,
Steam Pumps,
Divers, Hawser,
Lifting Screws,
Etc., furnished
Promptly on
Orders by Tele-
graph or other-
wise.



OPEN DAY and NIGHT.
Long Distance Telephone 725.

OFFICE 23 RIVER ST.



USE THE VANDUZEN
...STEAM JET...

PUMP

The BEST Steam Jet Pump in the WORLD,

It pumps the most water using the least steam.
Its cost is a little more than the common syphon, but will use only one-third the quantity of steam; and it takes coal (?) of \$ to make steam.

The ONLY reliable Jet Pump for fires on steam vessels.

A No. 7 Pump costing \$25.00 will force water through 50 feet of hose and throw a $\frac{3}{4}$ inch solid stream of water 75 feet from end of nozzle without fail as long as there is water at end of suction pipe. It will not freeze. Has no valves.

Every pump guaranteed. Ask your ship chandler for them, or write to us for illustrated catalogue.

THE E. W. VANDUZEN CO., Cincinnati, O.

A. Gilmore's Sons,
Dry-Docking,
Ship Building and
Repairing.

EAST SIDE, NEAR IRONVILLE,

TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill. RATES OF DOCKING, Ten Cents per registered gross ton for vessels over 200 tons. Jig Mill and Planer in connection with Dock.

'PHONE NO. 157.

H. A. HAWGOOD, PRESIDENT.

JOHN MITCHELL, V. PRES.

R. L. IRELAND, TREAS.

W. W. BROWN, SEC'Y AND M

The Shipowners' Dry Dock Company.

LENGTH OF DOCKS:

No. 1, 462 Feet.
No. 2, 350 "
No. 3, 360 "

WIDTH OF GATES:

50 Feet.
55 "
50 "

DEPTH OVER SILLS:

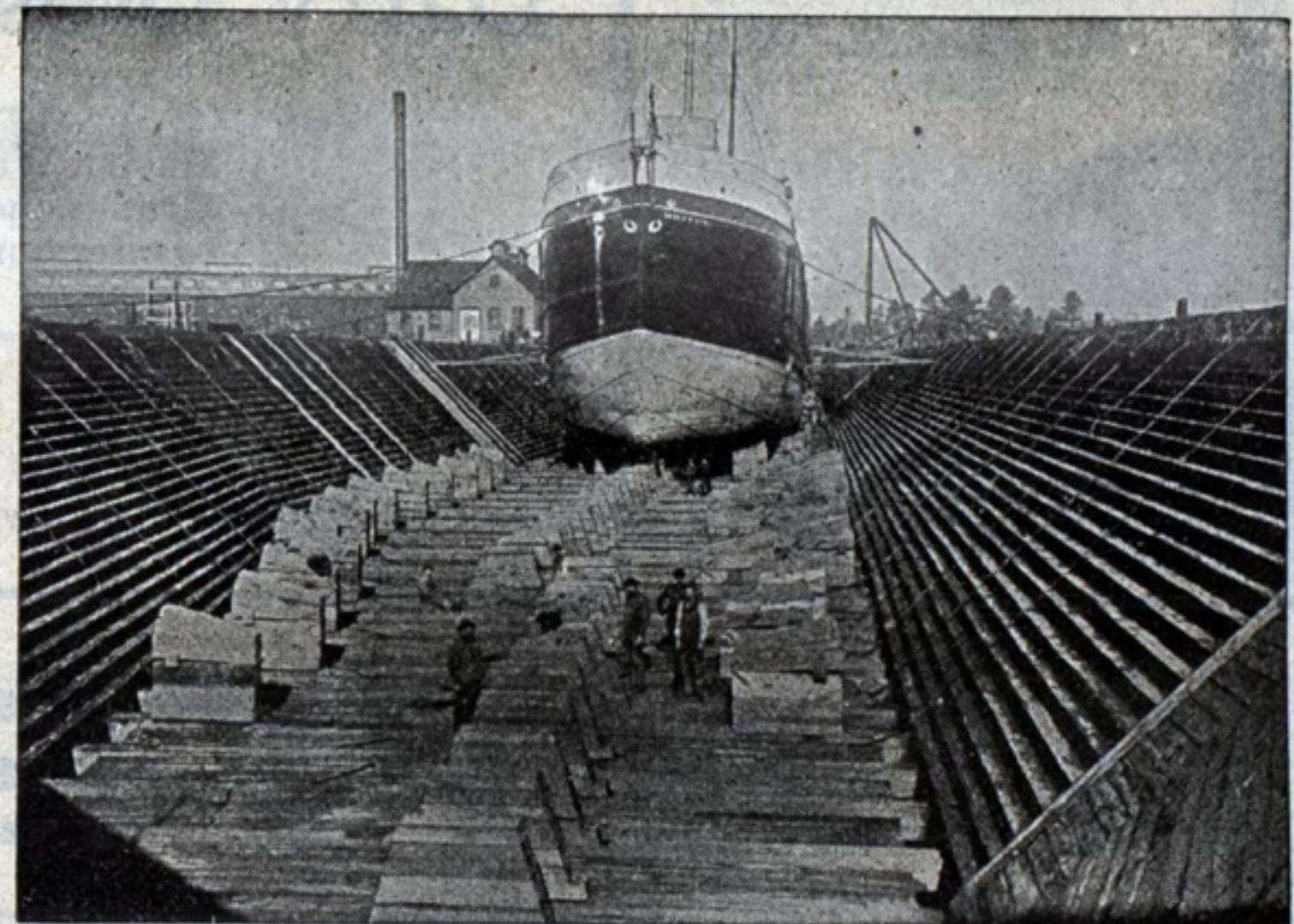
18 Feet.
18 "
20 "

PROPRIETORS OF

The Only Dry Docks at the Port of Cleveland, O.

Patrons, Friends and Subscribers will confer a favor by mentioning the MARINE RECORD where they are led to make purchases through our advertising columns.

Plates and
Material
always on
hand to
repair all
kinds of
Metal
Ships in
Shortest
Time.



Best
Quality of
Oak in
Stock
for
Repairing
Wooden
Vessels of all
Classes.

SIZE OF DOCK
Length, Extreme..... 587 feet. Breadth, Top..... 90 " 4 in. Breadth, Bottom..... 52 " 55 feet 9 in.
Entrance, Top 50 " Depth over Sills..... 18 "

LARGEST DRY-DOCK ON THE LAKES.
Prices for Repairs and Docking
same as at Lower Lake Ports.

A Number of Propeller Wheels in Stock at Dry-Dock.

SUPERIOR, WIS.